THE CULTIVATOR.

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J. BUEL, *Conductor.*

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THE CULTIVATOR.

TO IMPROVE THE SOIL AND THE MIND.

☞ An absence from home, and a severe indisposition, which have intervened since the publication of our October number, have prevented that personal attention to our correspondents which we have been desirous to bestow, and which we hope hereafter to be able to give them.

PROPOSED IMPROVEMENT.

We intend to enlarge our sheet on the commencement of our fifth volume, in March next, and to advance the subscription price of the CULTIVATOR to ONE DOLLAR a year. As our patrons are scattered over a territory of more than fifteen hundred miles in extent, we give this early notice that we may be able, from the returns that shall be made, to graduate our edition of the fifth volume by the extent of our subscription list.

The CULTIVATOR will then be printed on a sheet of twenty-eight by forty inches, of improved quality of paper—costing $8.50 per ream—its contents will be considerably increased—its pictorial illustrations multiplied, and its intrinsic value greatly enhanced. In its new form, a monthly number of the CULTIVATOR will contain as much letter press print as a monthly number of the Penny Magazine, published by the British Society for promoting useful knowledge, and which, at two dollars a year, is reputed to be the cheapest periodical published in the world.

Several considerations have rendered the proposed alterations expedient. The value of our subscription is diminished ten per cent by commissions; it has been reduced other ten per cent, during the last year, by the depreciated value of foreign bills remitted to us in payment; and, though our rules would otherwise indicate, much is lost in bad debts, and a large amount absorbed in postage. But pecuniary considerations are of minor weight, except as they enable us to enhance the value of our publication. The object of our establishment was to instruct, encourage and elevate the great producing class—to improve the moral and social condition of society. Its UTILITY in promoting these great objects, has been demonstrated, in the most satisfactory and flattering manner, by a subscription list of *nineteen thousand names.* We would now essay to enlarge the measure of its usefulness; which we are persuaded we can do, with the aid and co-operation of those generous and patriotic citizens, who, justly appreciating our motives, have hitherto ably and efficiently seconded our efforts. If patriotism is aught but a name, it consists in bettering the condition of society at large; and this is in no way so likely to be effected as by improving the state of our agriculture. "I KNOW OF NO PURSUIT," says Washington in a letter to Sir John Sinclair, "IN WHICH MORE REAL AND IMPORTANT SERVICES CAN BE RENDERED TO ANY COUNTRY, THAN BY IMPROVING ITS AGRICULTURE." We indulge the hope, that influenced by this noble sentiment, which we quote from the father of our country, the gentlemen, in different parts of the Union, who have so far sustained our efforts, will not relax in DOING GOOD.

Our subscriptions for the fifth volume will be forwarded with our January number; and every eleventh copy, or its equivalent, will be allowed to gentlemen who forward to us subscription monies free of charge.

AN AGRICULTURAL CONVENTION

Is appointed to be held at the City Hotel, in the city of Albany, on the first Thursday of February next, at 10 o'clock A. M. and the anniversary of the New-York State Agricultural Society will be held at the City Hall on the same day.

Whether these meetings will be well attended, or whether, if well attended, they will result in any measures favorable to the great interests of agriculture, remains to be seen. The exertions of a few individuals, however well intended, or well directed, can effect but little, without the co-operation of the legislature, and of the people at large.

Agriculture is a non-combatant in party warfare. She regards the whole of the community as her children, and as entitled equally to her affections; and has, therefore, no political favors to bestow, and none to ask. She is like the good natured mother, who, slighted and neglected by the children she has nursed and brought up, nevertheless preserves her good temper, from the hope of returning affection in her deluded offspring. But the patience of the good old lady is nearly exhausted, and we opine, that if she would maintain her maternal rights, she must again resume her parental authority.

But to come to plain matters of fact. What is the state of our agriculture, upon the products and profits of which every class of the community must ultimately depend for prosperity in life? Is it improving, in proportion to our increasing wants, or the facilities afforded by the intelligence of the age? Is it sufficiently enlightened, encouraged and respected? Do the people, does the government, give that attention to its improvement, which sound policy suggests, and which its importance imperiously demands? Decidedly the most agricultural people in the world, in our habits, do we raise our own bread-corn, the first requisite to national independence? We do not put these questions to individuals, or to isolated districts—for there are such, we know, that might answer them affirmatively—but we put them to the state—to the nation. To speak in general terms, our cultivated lands have been deteriorating, by an exhausting system of husbandry, from the time of their first occupancy, until not only farms, but entire districts, have been in a measure abandoned, as unfit for the habitation of man. This should not be—need not be. What would be our condition, in regard to wheat, the great staple of our state, were it not for the virgin soils of the west, brought under cultivation within the last forty years? The old districts once produced this grain, far beyond the home consumption. They do not do it now. But they can be made to do it under an improved system of husbandry. The vallies of the Hudson and Mohawk, and the basin of Lake Champlain, can be made to yield again their tribute in this grain, by the same means which have renovated the fertility of modern Europe, and which are now successfully employed in renovating the worn out soils of many districts of our own country.

Some of the once most fertile portions of the old continent are now virtually desert, by reason of the ignorance, the indolence and the violence of man. Are not portions of our own country threatened with a like calamity? There are other portions of the old continent, on the other hand, where the fertility of the soil has been preserved, and there are others where it has been doubled, trebled and quadrupled, by the intelligence and industry of the rural population, encouraged and rewarded by the patronage of government. These examples of wisdom and foresight we can imitate, we ought, and we must imitate, if we would be a free, a prosperous and a happy people. It were folly to erect costly hydraulic structures where there is no water to propel the machinery. Our cities and villages—and the non-producing classes of the community—may be compared to the hydraulic structures, and agriculture to the stream—which gives to them power and utility. If the stream fails, the machinery stops, and is useless. If agriculture languishes, towns decline, commerce diminishes and want pinches.

We will state a plain proposition. An acre of land, managed under the old exhausting system, yields a nett profit of five dollars per annum. Apply this to twenty millions of acres, and you have an aggregate of one hundred millions of dollars, which is annually added to the stock of national wealth by the labors of agriculture, and which is perhaps squandered, or thrown away, by the idle and licentious portion of community. Now if, by legislative encouragement—by a better system of education, and by those stimulants to industry which have been successfully applied elsewhere—each acre of land can be made to double its nett profits—a supposition neither unreasonable nor improbable—our stock of national wealth will be increased one hundred millions of dollars a year beyond what it now is, our lands will be improving, instead of deteriorating, and the nation will be correspondingly prosperous and happy.

We seriously commend this subject to the notice of the editors of our public journals, and to all classes of our population; and hope that the coming winter will show a better spirit towards agricultural improvement than has been witnessed in years past.

PEAT EARTH AND PEAT ASHES,

IMPORTANT SOURCES OF FERTILITY TO THE FARMER.

Peat earth and swamp muck, from our marshes and swamps, are composed principally of decayed vegetable matters, washed in from higher

grounds, or the remains of aquatic plants, which have grown and decomposed on the spot. They almost invariably constitute a valuable manure for up-lands, and may be rendered fertile in their place of deposite—when brought into a soluble state by fermentation, or reduced to ashes by fire. These deposites of vegetable matter are often the accumulation of centuries, and have been preserved from ordinary decay by the presence of too much water, and of too little heat and air, until they have become so antiseptic in their quality, as to resist putrefaction in many cases, even when laid dry, until they are brought in contact with fermenting substances, or changed in their nature by the action of fire. These agents it is the province and interest of the farmer to apply. And to instruct him in the mode of employing these great auxiliaries of fertility, is the object of this article, and of other articles which we design to give in our future numbers.

The first step in the process, is to drain well the ground where this earth is deposited, or has accumulated; or, if this is impracticable, to remove the earth to dry ground.

The second step is, if the change is to be effected by fermentation, to mix it with other substances which will readily ferment, or induce fermentation remotely. This may be done by top-dressing, or by composts. The latter is employed when the object is to enrich up-land, and the former when the intention is to render the drained marsh or swamp fertile. The best compost is made of one part unfermented manure, and three parts of swamp earth, placed in alternate strata, to the height of four to six feet. When the temperature of the centre of the mass has reached 80 or 90 degrees, which may be ascertained by a stick shoved in, and left to acquire the temperature of the pile, fermentation has sufficiently progressed, and the whole may be mixed and applied to the soil with certain advantage.

Composts may in like manner be made with lime, green vegetable matter and ashes, and the fermentation accelerated by urine, soap suds, sea-water, kitchen wash, &c.

Fermentation may be induced by carting the earth to the cattle yards, and spreading it to the depth of eight inches or less, to become incorporated, by the tread of the cattle, with their dung, urine, and the liquids of the yard. And it may be induced remotely, by spreading the swamp earth immediately upon the up-land, especially if sandy and dry, where it becomes mixed with the vegetable matters of the soil, and with them undergoes the desired change.

To induce fertility in a peaty soil, after it has been laid dry, a good dressing of long manure, or of lime, are effectual; and often a mixture of three or four inches of sand with the upper stratum, has proved highly efficacious. Pairing and burning is another sure means of inducing fertility. In this operation, some inches of the surface, so deep at least as to embrace the roots of aquatic and other growing plants, is pared off, dried and burnt, and the ashes spread and mixed with the soil.

These operations may be carried on at any season when the ground is not frozen, and when the teams and hands on the farm find leisure. There are but few farms, and fewer districts, that do not abound in this element of fertility.

Peat ashes constitute an article of commerce in Europe, and vast quantities are transported from Holland to Belgium and Flanders, to fertilize those highly cultivated districts. These ashes cost about $13 per ton. A bushel of the best sort, which are black and heavy, weigh about forty pounds, and the ton containing fifty-six bushels, the cost of manuring with them, at the rate of nineteen bushels the acre, would be about $4.50. These ashes, according to the analysis of Prof. Brande, contain, in 100 parts,

Of silicious earth,	32	parts.
Sulphate and muriate of soda,	6	"
Sulphate of lime,	12	"
Carbonate of lime,	40	"
Oxide of iron,	3	"
Impurities and loss,	7	"

The mode of their application, in Flanders, is as follows: They are spread upon young clover, in the spring, in calm and hazy weather, at the rate of eighteen to twenty bushels the acre. They are also laid on pastures and on wheat, in March and April; on oats and beans in the beginning of May, and on rye in October and November. Their chief employment is, however, for green crops; it having been found, on comparative trials in Flanders, that top-dressed clovers, where the ashes were used, were much earlier, heavier, and superior in every respect, to those which had undergone a top-dressing of horse and cow dung. One of the best evidences of their utility, is the fact, that the clover crop never fails when they are applied. Besides improving the crop, they are also useful in preventing the injuries arising from insects, and when applied to pasture, they are highly serviceable in the destruction of moss. To numerous individual declarations of their beneficial effects, Sir John Sinclair, to whom we are indebted for this part of our statement, adds the public declaration of eighty-three practical Flemish farmers, to the effect, that "they know by experience, that when clover is not manured with Dutch ashes, at the rate of nineteen bushels per acre, the following crop is very bad, notwithstanding any culture that may be given to the soil; whereas they always have an excellent crop of wheat after clover, and, doubtless, in proportion to the quantity of manure thus used." The farmers who signed this declaration, in most cases carted the ashes forty and fifty miles by land, after they had been transported by water from Holland. See Sir John Sinclair's account of the agriculture of the Netherlands; also Radcliff's Flanders.

But the use of peat ashes is not confined to the Netherlands. They are extensively used in Britain, and are produced in large quantities from what is termed the Newbury peat. We find in *British Husbandry*, the following description of the mode of burning the peat, and statement of the application and utility of the ashes:

"The peat is cut, with a peculiar kind of spade, into long pieces, about three and a half inches broad every way, after which it is conveyed from the spot where it is dug, in wheel-barrows, to a short distance, where it is spread upon the ground in regular rows, until it be dried by the sun and wind. It is thus cut down until the gravelly bottom is reached, if it can be sufficiently drained; but although persons are employed to pump the water, that cannot always be completely effected.

"After having laid thus to dry about a week the pieces are turned, and this being three or four times repeated, a small round heap is made in the middle of the place where the peat is spread, and in the centre some very dry peat is put, which being lighted, the fire communicates slowly to the rest of the parcel. When it is completely lighted, an additional quantity is put upon the heap, and this is continued till the whole is consumed, which generally occupies one or two weeks, and sometimes still longer, as quick burning is not approved of, and the rain seldom penetrates deep enough to extinguish the fire. The heaps are commonly of a circular form, and rather flat at top; at first very small, but gradually increasing, until they sometimes becomes two or three yards deep, and six or seven yards in diameter. According as the peat is more or less dry, or contains more or less essential oil, or, as it is termed, is more or less fat—according as the weather is favorable or otherwise, and in proportion as the heaps are more or less large, just so much a shorter or a longer time will it take to consume. A fire regularly kept up, but burning by slow degrees, will retain more of the vegetable alkali in it than a more quick one; and in proportion to the heat of the fire the same quantity of peat will produce more or less ashes: Thus it has been stated by Mr. Malcom, that in the parish of Frimby, in Surrey, three loads of dried peat, which is about the size of the usual heap, will yield from 6,000 to 7,000 bushels [of peat] which have been sometimes known to yield 2,400 bushels of good ashes; though the peat is generally so reduced in measure by combustion, that the ashes seldom yield one-fourth of its original bulk. The ashes being riddled, are then conveyed away in covered carts, and put under sheds to keep them from the wet until they are wanted for the land; for if kept under cover and dry, they are infinitely more strong and active than those which have been made some time, and have been exposed to the weather: the fresher they are, therefore, when used, the better. The usual time of applying them is in March and April, in the proportion of twelve to fifteen bushels per acre, according to soil and crop, as too large a quantity would be injurious, though, on meadow land, twenty bushels are often laid with advantage; and when not used as top-dressings, they are commonly spread at the same time the seed is sown, though for grass many people prefer the autumn. For corn crops, however, they are not in much estimation; but on turnips they are said to assist in checking the fly, and they are supposed to increase clover nearly a ton of hay the acre beyond what it would have yielded without them. Their effect, however, is not calculated to last more than a couple of years, but they are of such benefit to that crop, and to the succeeding wheat, that when a tenant quits a farm on which ashes have been laid the preceding year, it is usually customary to allow him one-half of the expense." These ashes are sold at Newbery at about seven pence (a New-York shilling) the bushel. They are found to contain from one-fourth to one-third part of gypsum, and sometimes even a larger portion. The other constituent parts are a little iron and common salt, with various proportions of clay, sand and lime.

Our attention has been turned to peat earth and peat ashes, at this time, particularly, by a late visit to Staten Island, where we saw their utility, as fertilizers of the soil, favorably developed in the practice of a gentleman, once distinguished in the business of the law, and now no less distinguished for his enlightened and systematic practice in the business of agriculture. He showed us the beds of several ponds or marshes, which he had drained, containing vast deposites of peaty earth, large quantities of which he was converting into manure, by some of the processes we have detailed, and also about 5,000 bushels of ashes which he had made recently by burning peat. His mode of obtaining the latter was as follows: He drained off the water to about three feet below the surface, and when the latter had become sufficiently firm, he went on with a six ox team, and turned ten or a dozen prairie furrows upon the outer edge of the deposite. As soon as the turf had dried sufficiently in the summer sun, he proceeded to construct the centres for his intended pits, by setting up a few sticks of wood and dry brush, at small intervals, around

the border, like the centre of a coal-pit. Around these he piled his dryest turf, and having fired the interior, fresh turf was added, as circumstances seemed to warrant, till the pile became quite large. In this way, with comparative little labor, he had obtained his 5,000 bushels of ashes, which were principally intended as a top-dressing for his grass lands. So abundant did the gentleman consider his resources of fertility—in his peat earth and peat ashes,—his sea weed and his fish—in the dung of his animals, from his oxen to his poultry,—and in the litter and wash of his yards and kitchen—that he calculated confidently, and we believe on safe grounds, that he would be able to manure well one hundred and sixty acres of land annually.

These hints cannot but be acceptable to farmers on the seaboard; and the highly commendable example which we have given above, we trust will stimulate them thoroughly to try these neglected means of enriching their lands. We shall offer further remarks upon this subject in our next number.

Berkshire Cattle Show.—We attended the twenty-seventh anniversary of the Berkshire Agricultural Society, and witnessed with great pleasure the many demonstrations it afforded of the growing utility of that association upon the social, moral and intellectual condition of the county.—Its anniversaries have lost none of their interest—none of their usefulness. Perhaps three thousand people were present; and few, if any of them, we believe, went home without having acquired some useful knowledge in their business, or some new stimulus to useful exertion. We believe there is no district of our country which can boast of more and better schools than Berkshire, or that has sent abroad more and better teachers. This successful effort at intellectual improvement, we are persuaded, is in a great measure to be ascribed to the influence of her agricultural society upon the feelings and enterprise of her citizens.

BLIGHT IN PEAR TREES.

The Rev. Mr. Reed, of Poughkeepsie, has communicated to the Philadelphia horticultural society *his* mode of preventing the blight in pear trees; and we must confess his theory is a plausible one, and seems in a measure to be confirmed by his practice. It is to impregnate the soil about the tree with iron, where this mineral does not already exist, which is effected by putting a bushel of blacksmith's cinders about the roots of each tree. In several trials made by Mr. Reed, in the course of many years, the experiment uniformly succeeded, and the trees became healthy and productive. Mr. Reed also alludes to the practice of hanging old iron upon the branches, as a means of preventing blight. We remember to have seen this practised in 1802, in some cases with apparent success, and in others without any sensible benefit. This difference in result may have arisen from the circumstance, that in the successful cases the iron was highly oxidized, and of course was carried to, and blended with, the soil, by the rains; while in other cases this effect was not produced.

If iron is beneficial in preventing blight in the pear, it must be so in one of two ways: it is necessary as natural and essential aliment to the plant, or is destructive or offensive to some species of insects which prey upon and destroy it. We are yet inclined to the opinion that the blight is caused by animalcule, that is, insects too small to be detected by the naked eye, which subsist upon the sap, or at least vitiate and poison it. We know that a family of these insects has destroyed whole forests of firs in Germany, at different periods; and analogy would seem to authorize the conclusion, that there are species which prey upon the pear, and other kinds of trees. The trials which we have made of washing the bole of the pear tree with chloride of lime, though they do not positively confirm this opinion, go far to strengthen it. The presence of iron in the soil, as well as the application of chlorine to the bark of the tree, might impart to the sap a property obnoxious to the animalcule, and thus preserve the tree; besides so far as our observations have gone, ferruginous soils, or soils charged with iron, are most exempt from insect depredations. If we assume the other position, that iron is part of the alimentary food of the pear, and that blight is caused by the want of it, we are met by the formidable objection, that while the *cause* is radical and continuous, the *effect* is periodical or temporay. Natural causes always produce like natural effects.

Mildew on the gooseberry and grape.—We find in Mr. Reed's communication a suggestion in regard to mildew on the gooseberry and grape, which in a measure corrob rates the correctness of the opinions we have heretofore expressed on this subject. The suggestion is, that salt will prevent the mildew on gooseberries, and probably on the grape. A pint of strong brine, put at the root of each plant in the spring, he informs us, has not only prevented mildew on the gooseberry, but has restored to the berry, before diseased and diminutive, its original size. All we object to is the mystical mode of application. "The brine should be put on without stirring the earth," says the Rev. writer, "so as [not] to wet the roots, as in that case it kills the plant, but there is no danger if poured on the earth undisturbed." The plain English of which seems to be, that the saline properties of a strong brine, if brought into immediate contact with the roots, will not only destroy the seeds of the parasyte, for such we consider mildew, but the vitality of the plant itself—the undisturbed surface arresting a great portion of the saline matter, which is subsequently carried down, by rains, in moderate quantities. This prescription is based upon the theory, that mildew, in the gooseberry and grape, is a parasytic plant, the germ or seed of which abides at the roots; that salt destroys the vitality of these germs or seeds; but that, when applied in excess, it also destroys the plant. The great object is, therefore, to graduate the remedy to the cure, and this would seem to be best accomplished, by applying the brine in winter or early spring, when the plant is dormant, and not absorbing the moisture of the soil—or in a very diluted form, when it is in the progress of growth. Partial experiments with the grape had induced Mr. Reed to believe, that a like application of brine to the grape, would produce results alike favorable.

AGRICULTURE IN KENTUCKY.

We like the Kentuckians. We like them for their chivalrous, disinterested patriotism—we like them for their ingenuousness and hospitality—and we like them, particularly, for their noble efforts to improve the great business of our country, and of mankind—the cultivation and improvement of the soil. In Kentucky agriculture holds a dignified rank, as it ought to do in every land of freedom; her most talented and opulent citizens make it their business and dependence, and soaring above the narrow prejudices of the day, seem resolved to demonstrate this great truth, that individual happiness is most efficiently promoted, by united efforts to increase the prosperity of all.

Kentucky is probably not surpassed by any state in the number and respectability of her agricultural associations; and we think she is certainly not surpassed by any in the number and excellence of her fine animals, nor in the means she is adopting to perpetuate and improve her choice breeds. Among the latter we observe an association to publish a Kentucky stock book, to contain at least two hundred quarto pages, and fifty engravings on stone of their finest animals. Contracts have been made with the best artists, and the work is already in progress. Such a work is new in our country, and until recently was even unknown in Europe. It will be of great service to the breeder and stock farmer, and must tend greatly to facilitate the improvement of our farm animals.

Draining Tile, are manufactured in this city by Mr. Jackson. They give an aperture for the passage of water of about four inches square, will lay one foot of drain each, and are sold at fifteen dollars the thousand. We have this year laid four thousand, and they promise to be durable and efficient. In using them, we have dug to the depth of two to four feet, as circumstances required to reach the water stratum, or source of wetness, laid the tile upon hemlock boards, and covered them, and particularly at their junction, with tough sods, grass down, and trod earth in at the sides, so as to prevent the passage of water elsewhere than through the aperture. We have then, where the soil was stiff, thrown in some brush, and filled up the trench. These precautions were deemed necessary to keep the drain in order, and to admit into it the water coming from the slope above. When stones cannot be had these tiles constitute an excellent material for draining, and in all cases, perhaps, they may be considered an economical one, if well laid.

The Potato.—It is said of the great Linnæus, that he preferred the Jerusalem artichoke to the potato, against which he had a botanical prejudice on account of its belonging to a poisonous genus of plants, (the *solanum.*) When long exposed to the sun, the potato is said to have become so poisonous as to kill cattle which ate them. In a clammy, watery state, as is the case with some of the coarser varieties, they are undoubtedly unhealthy—but the better, dryer kinds are wholesome and nutritious. The misfortune is, that one half of mankind do not enjoy, if they know, the luxury of a good, well cooked potato—they graduate their value by the quantity, and not by the quality of the product.

ADDRESS,

DELIVERED BEFORE THE BERKSHIRE AGRICULTURAL SOCIETY, AT THEIR TWENTY-SEVENTH ANNIVERSARY, OCTOBER 5, 1837, BY J. BUEL.—*(Concluded.)*

The object of the farmer, in the management of his farming operations, should be, first, to obtain the greatest return for the capital and labor he expends; and, secondly, to do this without impairing the fertility of the soil, or the intrinsic value of his farm. To effect these objects, three prominent rules should be observed:—The first is—KEEP YOUR LAND DRY; or in other words, free from all superfluous moisture. The second rule is—KEEP YOUR LAND CLEAN; or in other words, free from weeds. And the third is—KEEP YOUR LAND RICH; or in other words, return to it, in the form of manure, all the refuse animal and vegetable matters which the farm affords.

KEEP YOUR LAND DRY. The importance of draining is not duly appreciated, nor its practice well understood, among us. Although water is indispensable to vegetation, too much of it is as hurtful as too little.—It is necessary to the germination of the seed, to the decomposition of the vegetable matter in the soil—to the transmission of the food from the

soil to the plant—to its circulation there, and to the maturity of the product. All these useful purposes are defeated, where water remains in the soil to excess—the seed rots, the vegetable matter which should serve as the food of the crop, remains insoluble, in consequence of the absence of heat and air, which the water excludes; or, if the seed grows, the plant is sickly, for want of its proper food, and there is consequently a virtual failure in the harvest. It is not from the surface only that we are to determine whether land is sufficiently dry to support a healthy vegetation; but we are to examine the surface stratum, into which the roots of the plants penetrate, and from which they draw their food. If this is habitually wet—if it grows marshy plants—if water will collect in a hole sunk fifteen inches below the surface—the land is too wet for cultivated crops, and means should be adopted to render it more dry. From my partial acquaintance with this county, I feel assured that much of your best land is rendered unfit for tillage, or the growth of the finer grasses, by reason of the excess of water, which passes or reposes upon the subsoil, unnoticed by the cultivator. These lands are denominated cold and sour, and they truly are so. Cold, sour lands are invariably wet lands below, if not upon the surface. But if the superfluous water was judiciously conducted off by efficient underdrains, (for the construction of which, you possess the best of materials in abundance,) these lands would be rendered warm and sweet, and highly productive, and the outlay would be repaid by the increased value of two or three of the first crops. Wet lands are generally rich lands, abounding in vegetable matters, which water has preserved from decomposition, but which readily become the food of plants, when the water is drawn off. Let me imagine a case, which I am sure will be found to exist in many parts of your county. There is a slope of a hill, half a mile in extent, terminating in a flat forty rods wide, through which a brook meanders. The soil on this slope, and in this flat, is of a light, porous quality, six to twelve inches deep, reposing on a subsoil impervious to water, as clay, rock or hardpan. By soil, I mean the upper stratum, in which vegetable matters are blended with the earthy materials, and which constitutes the true pasture of plants. Near the top of this slope, all along on a horizontal level, or perhaps lower down, spouts or springs burst through the subsoil, a thing very common in hilly districts, the waters from which finding an easy passage *through* the loose soil, spread and run down the slope, and *upon the subsoil*, and through the flat, till they find their level in the brook. A thermometer plunged down to the subsoil, will indicate, at midsummer, a temperature probably not greater than 60°, whereas to grow and mature many of our best farm crops, we require a heat in the soil of 70° or 80°. How shall we remedy this evil, and render this land profitable to the occupant? Simply by making an underdrain or drains, in a gently inclining direction, a little below these spouts or springs, and, if practicable, somewhat into the subsoil. These will catch and conduct off the spouting waters, and by laying the lower plane dry and permeable to heat and air, develope all its natural powers of fertility.

I will suppose another case—that of a flat surface, underlaid by an impervious subsoil. This is rendered unproductive, or difficult to manage, by *stagnant* waters. The rain and snow waters, penetrating the soil, are arrested in their downward passage, by the subsoil, which not having slope to pass them off, they here remain, and stagnate, and putrify, alike prejudicial to vegetable and animal health. The mode of draining such grounds, and of rendering them productive and of easy management, is, first to surround the field with a good underdrain, and to construct a sufficient open drain from the outlet to carry off the waters. Then with the plough, throw the land into ridges of twenty to thirty feet in breadth, according to the tenacity of the soil, in the direction of the slope, and sink an underdrain in each of the furrows between the ridges, terminating them in the lower cross drain. The materials of the underdrains, which are generally stones, should be laid so low as to admit of the free passage of the plough over them. The superfluous water, by the laws of gravitation, settle into these drains, and pass off, and the soil becomes dry, manageable and productive. An acquaintance called upon a Scotch farmer whose farm had been underdrained in this way, and being informed that the improvement cost sixteen dollars an acre, tile having been used, remarked that it was a costly improvement. "Yes," was the farmer's reply: "but it costs a deal mair *not to do it*," which he illustrated by pointing to an adjoining farm, like situated, which had not been drained, and was overgrown with rushes and with sedge grass, and then to his own fields, teeming with luxuriance, and rich in the indications of an abundant harvest

I have dwelt upon the subject of draining with more detail, because I have personally realized its benefits, and am sure it may be extensivly gone into with the certain prospect of reward.

KEEP YOUR LAND CLEAN. Weeds being generally indigenous, or well acclimated, are gross feeders, and exhaust the soil more in proportion to their size than cultivated crops. We should consider that farmer a reckless manager, who should suffer strange cattle to consume the food prepared for his farm stock. How much more is he deserving the name of an economist, who permits his crops to be robbed of their food, and consequently stinted in their growth, by thistles, daises, dock and pigweed?

An idea prevails with some, that weeds, by the shade they afford to the soil and to crops, prevent the exhalation of moisture in times of drougth. Precisely the reverse is the case. They exhaust the moisture of the soil in proportion to the surface of their leaves and stems. Some plants, it is affirmed, daily draw from the earth, and exhale from their superficies, more than their weight of moisture.

KEEP YOUR LAND RICH. This is to be done by manuring, by pasturing and by alternating crops. Most of this county, I believe, is devoted to cattle and sheep husbandry, for which it seems well adapted; and these branches of husbandry afford ample means of enriching the soil and of enlarging the grain and root crops. Cattle and sheep make manure—manure makes grain, and grass, and roots—these in return feed the family, and make meat, milk and wool; and meat, milk and wool are virtually money, the great object of the farmer's ambition, and the reward of his labors.—This is the farmer's magic chain, which, kept bright by use, is ever strong and sure; but if broken or suffered to corrode by neglect, its power and efficiency are lost.

You possess all the earthy elements of a good soil—clay, sand and lime. It is *your* province and *your* duty to husband and apply the vegetable, and most essential element of fertility—MANURES. These are as much the food of your crops, as your crops are food for your cattle, or your family; and it is as vain to expect to perpetuate good crops without manure, as it would be to expect fat beef and fat mutton, from stinted pasture or buckwheat straw. We see, then, that manures are the basis of good husbandry, whether we have reference to tillage or cattle farms; and that tillage and cattle reciprocally benefit each other.

It results from these facts, that a farmer should till *no more land than he can keep* DRY, and CLEAN, and RICH; and that he should *keep no more stock than his crops will feed well, and that can be made profitable to the farm.*

The farmer who makes but thirty bushels of corn, a dozen bushels of rye, or a ton of hay, from an acre of land—and there are not a few who fall short of this—is hardly remunerated for his labor: but he who gets these measures from half an acre, and every good farmer ought at least to do so, realizes a nett product of one half the value of his crop, or receives twice as much for his labor as the first does. The reason of this is, that the one permits his acre to become poor, either from not saving and applying his manure, or from spreading it and his labor over too much land, or by cropping it too long, while the other keeps his land rich, and thereby saves half his labor. How is this disparity increased, when, instead of being double, the crop of the good farmer exceeds that of the bad farmer four-fold, incidents that very often happen on adjoining farms? If the latter gets one hundred dollars per annum for his labor, the former gets four hundred dollars for his labor. No inconsiderable item this, in the aggregate of a man's life, or in the profit and loss account of a large farm.

So with our animals. The food which parsimony, or indolence, or ill judged economy, doles out to a beast, and which barely *keeps* him two years, would, if judiciously fed out, fatten him in six months; and thereby convert three quarters of the food into meat, milk and money, which, in the other case, is expended to keep the animal alive. Time is money, as well in fattening animals and feeding crops, as in other expenditures of human labor.

Pasturing is a means of inducing fertility. It is computed to add twenty per cent, to the fertility of a first rate soil. This arises from two causes. All that is grown upon the soil, is returned to it in the droppings of the animals which graze upon it. And in the second place, when broken up by the plough, the sward is converted into food for the tillage crops, and has been found to be equivalent, in a well set sod, to more than twelve loads of dung on the acre. In this way sheep husbandry is known to enrich lands rapidly. But this remark does not apply to meadows where the crop is carried off, and no equivalent returned to the soil, in the form of manure.

Alternation of crops is unquestionably one of the best and most economical means of preserving fertility, and of increasing the profits of the farm. All crops exhaust the soil more or less, of the general elements of fertility, though all do not exhaust to the same extent, nor do all exhaust it alike of certain specific properties. It is believed that every family of plants requires a specific food, which other families do not stand in need of, and which they do not *take up*. This is evidenced by the fact, that wheat cannot be grown profitably, in ordinary grounds, in two successive years, upon the same field, without a great falling off in the product. And it is now laid down as an axiom, in good husbandry, that two crops of any small grain should never be taken from the same field in successive years, because they draw too largely upon the same specific food.—But after an interval of four or five years, in which grass and roots intervene, the specific food of the wheat crop has so accumulated in the soil that this grain may then be again profitably grown upon it. So with all other farm crops, not even excepting the grasses. The law of natural change in the products of a soil is so palpable, that in Flanders and Holland, where flax is one of the profitable staples, they do not think of cultivating this crop upon the same ground oftener than once in ten or twelve years.—Our farmers seem to appreciate these truths in reference to tillage crops,

without duly reflecting, that they apply as well to grass as to grain.—Meadows do deteriorate; in a few years the finer grasses run out, because the soil becomes exhausted of the particular food which affords them nourishment; coarse or innutricious plants take their place, and the herbage becomes inferior in quality and greatly diminished in quantity. Upon an average, old established meadows would yield double their present crops, if judiciously alternated with grain and root crops. The terms "suitably divided into meadow, plough and pasture lands," which are generally employed to recommend farms on sale, are an indication of bad husbandry, and very often betray the secret which compels the owner to sell. Excepting in very stony districts, every acre of land which will produce good grasses, may, by being rendered dry and rich, be made to produce good grain and roots. In the convertible system of husbandry, permanent meadow or plough lands are almost unknown—every field produces in turn, crops of grain, grass and roots.

There are three classes of crops which alternate beneficially with each other, viz:—1st. Grain, or corn, or dry crops, which mature their seed, and most exhaust the fertility of the soil;—2d. Grass crops, of the influence of which upon the soil, I have already spoken; and 3d. Root or green crops, embracing turneps, potatoes, beets, clover, &c. In old meadows and pastures, not only the better grasses disappear and coarse herbage and mosses come in, but the soil becomes too compact and hard, to admit the free extension of the roots, and the genial influence of the sun, dew and atmosphere, which are primary agents in the process of vegetable nutrition. Tillage corrects these evils. It cleans the soil of foul weeds, and converts them into sources of fertility; it breaks and pulverizes the soil, and fits it for the return of the grass crop at the close of the rotation; while the vegetable matters of the sward contribute to augment the grain or root crop which is to follow. All green crops are more or less fertilizing, when buried in the soil; but clover is to be preferred, as well on account of its enriching properties to the soil, as that it also affords hay and pasture. I have practised sowing clover seed with all my small grain crops, though I intended to plough the field the following year. The food which this clover affords to the coming crop, richly compensates for the cost of the seed and sowing, to say nothing of the pasture it gives in autumn. Hence, tillage is admirably calculated to fit and prepare the ground for grass: while grass, in return, directly or indirectly furnishes an abundance of food for grain and roots. The fertility of a soil depends essentially upon its power to absorb water by cohesive attraction, and this power depends in a great measure upon the state or division of its parts; the more divided they are, the greater is their absorbent power. The crop upon a hard, compact soil, will suffer from drought; but if this soil is finely pulverized and broken, it will suffer much less. The first may be compared to the rock, which receives moisture upon its surface, and upon its surface only; the latter to the sponge which receives and transmits moisture to its whole mass, and which retains it for a long time.

I will close my remarks upon the farm, already too protracted, I fear, for the patience of my hearers, by a brief reference to the prominent crops which seem adapted to the soils and climate of Berkshire.

Although your soils contain sand, and clay, and lime, three prominent requisites for the growth of wheat, yet they do not seem adapted to the profitable culture of this grain—they do not enable you to compete successfully with the great wheat districts of the west. This grain may be grown for family use, but I doubt whether its culture can be made profitable here, as an article of commerce; when cultivated, however, the spring varieties are to be preferred to those of winter, as being less exposed to the vicissitudes of the seasons, and the ravages of insects, and consequently more certain in their returns.

Indian corn is as indispensable to the Yankee, as the potato is to the Irishman, or the oat to the Scotchman. It is not only meat and meal to his family, but it is food for his cattle and manure for his land. It is therefore a very desirable crop, and hence it is often cultivated at an absolute loss. It requires a great outlay of labor; yet if the soil is dry, and clean, and rich, and the season propitious, few farm crops make a better return. It should never be planted, in this latitude, upon wet or cold, or poor lands. The shortness of the summer is a serious objection to its culture. There are several things, however, which may be done to obviate, or at least to lessen, this objection. The early varieties ripen a fortnight earlier than the late varieties. By making the land dry, we may raise its natural temperature. By the liberal use of unfermented manure, spread and well turned under by the plough, the warmth of the soil may be farther increased, and the growth and maturity of the crop thereby accellerated. If the surface be flat, and the crop likely to suffer from heavy or protracted rains, throw your land into ridges for three rows, or into narrow ridges for one or two rows, which will render it more dry and warm. In the culture of this crop, I have found the harrow and the cultivator, far preferable to the plough. The latter cuts and bruises the roots, which are ordinarily of greater length than the tops, wastes the manure, and robs the plants of more than half their pasture. Earthing or hilling the plants, is also in a great measure dispensed with in modern husbandry—it being found that good culture consists in merely keeping the ground clean, and its surface mellow and open to atmospheric and solar influence. In harvesting, it is decidedly best to cut the crop at the ground, at the ordinary time of topping it, when the kernels have become glazed, and immediately to set it in stooks to dry and mature. The advantages of this practice are, first, it secures the grain and fodder from the injurious effects of early frost; 2dly, it gives more and better corn than when topped in the old mode; and lastly, it affords much more and far better fodder than any other mode of harvesting. The laws of vegetable physiology show, that the elaborated or *descending* sap of plants, constitutes their true and only food, and hence corn can receive no accession of growth, after it has been divested of the leaves, the elaborating organs, which grow above it. It is equally apparent, that when the stalk and grain are cut up together, the latter continues to draw elaborated food from the former for some time after it has been severed from its root. By attention to these matters, I have escaped all injury from frost to my own crop, for the last seventeen years, and have not yet been disappointed in obtaining a good—an abundant harvest.

This county, I think, is well adapted to the cultivation of oats. But oats, like store pigs, are too often left to shift for themselves, or to take up with what nothing else will thrive upon. From the abundant product which they yield to good culture, their exemption from disease and insect enemies, and the uniform high price they command in the market, I venture to recommend an increased attention to their culture, particularly on cold, moist lands, for which they are particularly suited.

Root culture seems well adapted to your soils, your climate, and your principal business—the rearing of cattle and sheep. This is emphatically the potato, the turnep and the beet zone—the potato on the stiffer soils, the ruta baga on those of a sandy or gravelly texture, and the beet on those of a loamy or medium grade. And they are all excellent for thriving on fresh manure, and of fitting it to become the proper food for your grain crops. They yield the greatest amount of food for animals; they ameliorate the soil, by pulverizing and cleaning it; they add much to the manure of the farm; and they alternate remarkably well with grain and grass in the system of convertible husbandry. In the culture of these crops, hand-hoeing may be in a great measure dispensed with—the plough and the harrow being principally employed in cultivating the potato, and the drill barrow and cultivator or horse hoe, in sowing and cultivating the Swede and the beet. A good dressing of manure will add from forty to fifty per cent to the value of these crops.

I cannot speak in too high commendation of the Swedish turnep, or ruta baga, particularly to the cattle and sheep farmer. It has never disappointed my expectations. I have readily converted it into meat and milk, and ever found a demand and a fair price for it in market. The tops afford a rich food for cows and other neat cattle, in late autumn. Secured in cellars, the roots may be fed to stock during winter; or, if buried in the ground, they may be commenced upon in March and fed till June. They give a great flush of milk to cows, without imparting to it, where the animals have daily access to salt, much unpleasant flavor. The horse and the hog feed and thrive upon them; the ox will fatten upon them, fed with two bushels a day, and a trifle of hay or straw; and they are invaluable for sheep in the winter and spring, particularly to milk giving ewes. Six hundred bushels to the acre may be deemed a medium crop, under good culture, though the product has been known to exceed this quantity threefold. The ruta baga requires a loose, rich, dry soil.

The mangold wurzel has been highly commended by those who have cultivated it successfully; but my experience with it has been but limited, and my success not flattering. It demands more labor than the ruta baga, is less certain in its growth, and does not keep good so long. But it may be grown on loams that are too tenacious for the Swedes.

The sugar beet may be cultivated as easily as the mangold wurtzel, yields nearly the same product, and its culture is about as profitable, for cattle food and for ameliorating the soil, as the latter. But when we consider its value as a material for the production of sugar, I cannot but consider its introduction among us, as a farm crop, as forming a new and an auspicious era in our husbandry. All beets abound in saccharine matter, but the white Silesian is denominated the sugar beet, on account of its diminutive, or rather medium size—it having been ascertained, that the juices of the smaller roots are more concentrated, or abound more in sugar, than the juices of the larger growing varieties. The culture of the sugar beet has but commenced among us, and little or no preparation has yet been made for the manufacture from it of sugar. I have perfect confidence, however, that this will soon be done, and that the farmers of Berkshire will ere long find a sure and liberal profit in the culture of the sugar beet.

There are many other topics, connected with the prosperity of the farmer, and through him with the best interests of the country, which I should like to discuss, did time permit; but I forbear; and will close with some admonitory hints, to the young class of my audience.

Young farmers of Berkshire! You are soon to fill the places occupied by your fathers. Upon you will devolve, not only the charge of this society, which has been so far sustained with praiseworthy zeal, and great public usefulness, but the welfare and character of the country. Your situation will soon be one of great responsibility. As you sow, so you must reap If you fail to deposite the good seed in the spring time of

life, the olive will yield you no oil, nor the fig-tree its fruits, in the summer of manhood; the harvest of autumn will disappoint your hopes, and a cheerless winter of age will come upon you, embittered by regrets of neglected opportunities of providing comfortably for yourselves, and of doing good to others. You have before you worthy examples, in the industry, enterprise and intelligence of your fathers. But neither talents, nor wealth, nor virtues are hereditary. You must build upon your own foundation—you must become the artificers of your future fame and fortune. You must yourselves enrich your minds, sow the seeds and mature the good plants, if you would reap the abundant harvest, and enjoy the reward. The elements of education which you have gathered in the schools, are the paper upon which you are to record your characters—the mere implements of usefulness. They will profit you only as you use them with diligence and good judgment. But the standard of your acquirements must not be graduated by the past. Every age demands a greater degree of mental culture, than the one which preceded it; and it behooves you to qualify yourselves for that which now dawns upon your mental vision. The more you learn to depend upon yourselves, the more you will find developed capacities and energies, of which you are yet unconscious of possessing—the more likely you will be to prosper in life. The sapling which is sheltered by the towering pine, or wide-spreading oak, is neither so strong nor so graceful, as that which grows up without shelter, and acquires strength and solidity from the buffetings of the winds and storms. The plant that is nurtured in the shade is not so beautiful—its blossoms are not so fragrant, nor its fruits so rich, as the form, the flower and the fruit of that which grows in the glare of solar light.

The culture of the mind should engage your early attention, that you may sooner profit by its counsels and its powers. Mind is the great master power, which instructs, guides and abridges human labor—the grand source of intellectual pleasure—a faculty which distinguishes man from the brute, and which, as it is more or less cultivated, marks the gradations in civilized society. Say not that you have no leisure for this, that your time is engrossed in providing for your *animal* wants. Franklin found time to bestow upon his mind, high and useful culture, amid the cares and labors of an active mechanic's life. The hours that the avocations of the farm allow to study, amount, in the aggregate of early life, to months and to years. Knowledge is power; it is wealth; it is respectability; it is happiness; it endures with life. The mind may be likened to the soil. Both are given to be improved; and the measure of our enjoyments, and the welfare of society, depend upon the good or bad culture we bestow upon them. Indolence may be compared to the coarse marsh plants, which feed upon the soil and taint the air, without yielding any thing comely or useful in return, for man or beast;—intemperance, to broken down fences, which permit beasts to enter and consume the earnings of industry, and beggar the offspring of the owner;—litigation, to the thorns and thistles, which rob the soil of its fertility, and mar the beauty of the landscape. While, on the other hand, the faithful application of knowledge to the useful purposes of life, may be likened to the draining and manuring, which give fertility to the soil; the good habits which we establish, to the good culture bestowed by the husbandman—indicative alike of cheerfulness and plenty;—and the embellishments of the mind in literature, science and taste, to the gardens and grounds, abounding in all that is grateful to the senses, which should surround and adorn our rural dwellings, and beautify the country.

You have chosen an employment which is honorable, profitable and independent. Devote to it your best powers, till you have become master of the art, or of such branches of it as you design to follow—and until you have acquired so much of the science—a knowledge of the why and the wherefore—of the great laws of nature, upon which good husbandry is based, as shall enable you to conduct your operations with judgment and success. "Who aims at excellence, will be above mediocrity; who aims at mediocrity, will fall short of it." So the adage teaches, and so is the response of experience.

And finally, fellow-citizens, may you all be wise—all be useful—that you may all be happy—here and hereafter.

EXPERIMENTS.

Our highly respected friend, Judge Bradley of Onondaga, has instituted a series of experiments, during the last summer, to determine the effects of steeps at different temperatures, upon seed grain and pulse, &c. and has published the results in the Genesee Farmer. We give an abstract.

1. Oats were dropped into a pail of strong brine. They all floated. A like parcel dropped into water not saturated with salt, sunk. Conclusion—oats may be easily and safely separated from spring wheat by throwing the grain into strong brine.

2. A parcel of chess was thrown into brine, and a part of it sunk Conclusion—chess cannot be separated from wheat in this way.

3 & 4. Twenty kernels of wheat were put in strong brine fifteen minutes—eighteen of them grew. Twenty kernels were steeped in like manner twenty-four hours, and seventeen of them grew. Conclusion—seed wheat may be steeped twenty-four hours in strong brine without impairing the vegetating power.

6 to 8 were experiments made in steeping peas in scalding water from one to three minutes, which did not seem to impair their vitality.

9 & 10. Scalding water poured upon seed corn *did* impair its vitality. In one experiment the water was turned off immediately, in the other it was left upon the grain one minute. The grain mostly came up, but tardily, and the plants had a sickly appearance. Conclusion—seed corn should *not* be saturated with scalding water. As the object of steeping this seed is to saturate the grain, and induce early germination, water of a tepid or warm temperature, would seem to be preferable to that which is very hot.

12. Twenty kernels of wheat were put into boiling water one minute, and none of them came up.

13. Twenty kernels of badly blasted wheat were planted, and nearly all of them came up.

The best test of good farming is this—that every successive crop is better than the one which preceded it, and that the profits of the farm labor are annually increasing. A farmer who can realize these prospects is doing well. His land and his purse are improving. And he should never hazard this certainty, and the comforts which it confers, for wild experiments, or hazardous speculation.

But whenever, on the contrary, the crops are annually diminishing, the reward of labor is necessarily diminishing also; and it may be pretty generally inferred that both the soil and the purse are under the exhausting system.

A Tennessee Farmer.—"My farm," says Jacob Hughes, in a letter to the editor of the Tennessee Farmer, "contains between eighteen and nineteen hundred acres. I cultivate about two hundred acres in corn; about twenty in meadow; about one hundred in wheat and rye, and the balance is in pasture. I work ten hands. My farm is what we call here a grazing farm. I buy, graze and feed about three hundred cattle annually; raise and sell about two hundred hogs. My profits on cattle, hogs and other articles sold off my farm in 1835, were $9,945, and in 1836, $10,475."

The Buckeye Ploughboy, is the title of a new agricultural journal just commenced at Cayahoga Falls, Ohio, by Richard Fry. It is published monthly in numbers of sixteen pages 8vo. at fifty cents a year.

The *Family Newspaper and Domestic Monitor*, is the name of a weekly paper, to be published in this city, at three dollars per ann. under the editorial direction of Solomon Southwick, Esq. We have no doubt but this paper will be one of great usefulness to the family circle; and that the circulation of family and agricultural papers is calculated to effect a salutary influence upon the industry and morals of the country. Subscriptions to the Family Newspaper are received by *Alfred Southwick*, the intended publisher, at the Elm Tree Press, corner of State and North Pearl-streets, Albany.

To Correspondents.—We intend, at the commencement of our next volume, to comply with the request of "A subscriber," whose favor is post marked Hudson, and to explain fully what we mean by the *new system of husbandry*.

Obituary.—*Died*, recently at Boston, Thomas G. Fessenden, for fifteen years editor of the New-England Farmer; and recently, in Tennessee, Judge Emmerson, editor of the Tennessee Farmer. Both of these journals will be continued under the management of competent conductors.

CORRESPONDENCE.

THE GRAIN WORM.

J. Buel Esq.—Sir—The first that I knew of this insect doing any considerable damage was in 1833, and the extent of damage that year I cannot ascertain. I had a field of about five acres of summer fallow wheat that was materially injured; and there were other fields in the vicinity which were said to be injured likewise. The insect was called the weavel. Since that year I have not seen nor heard of its ravages till this year. I have heard of its ravages in the southern part of this county, to what extent I know not. I did not discover the worm in my wheat until harvest, when I found the grain light, and on the suggestion of a man in the field, I looked and found the cause. Many heads were wholly destroyed, and the worm had left: while other ears contained worms, some more and some less; and on threshing some of the wheat soon after housing, there were worms among the wheat, until disturbed by the flail, continuing their depredations; but they soon disappeared. As to the character of the worm, in its several transmigrations, it appears different from most insects that inhabit the air. Those worms that feed on vegetables and people the air in their perfect or insect state, deposite their eggs late in summer or autumn, and they appear in the worm state in the spring, and commence their depredations early in the spring or summer: but this worm does not appear until the wheat begins to form in the ear; the fly is supposed to make its appearance about the last of June. From these

facts I should be led to believe that it lies in its chrysalis state during the winter, and appears the fly in June or later, according to the temperature of the air. The chrysalis probably is formed in grass or other vegetable matter near the ground, and an exposure to light and heat is necessary to bring forth the insect: perhaps ploughing in the stubble may be a preventive, by burying the chrysalis in the ground and excluding it from light and heat; this was my management in 1833, the stubble was ploughed in and sown to winter wheat; the worm did not appear next season. As to this being a new species of insect I must differ from others, as I suppose I have seen it in small numbers at certain periods for more than thirty years, and I am led to believe that it is the same which is frequently seen in the pea pods preying upon the tender pea. I do not recollect ever seeing it in barley or oats, but think I have seen it in rye. As to the destruction of the worm entirely, I suppose it is as impossible as it would be to subvert those laws of nature, which brought it into, and keeps it in existence; for when God cursed the ground for man's sake, he not only produced briers and thorns, but put in requisition the insect tribes, that he who cultivates the ground should not only have scope for bodily exertion, but that the energies of his mind might also be put in requisition to obtain his daily bread. Having made these observations and already suggested the propriety of ploughing as a preventive, I should like to be informed whether the worm has committed equal ravages on wheat sown on stubble grounds as on summer fallows: this may be thought needless, as the worm is said to prey upon spring wheat; but I think it is probable if the worm lies in chrysalis during the winter, that it comes forth early in the spring, or it may be assumes the bug form before it appears in a flying insect, like the dragon fly, and the locust. If this is the case probably spring ploughing would not be early enough to prevent its appearance. As to early sowing of winter wheat, and late sowing of spring wheat, perhaps it is worthy of an experiment; but it must be as a matter of consideration, that insects generally are produced only by a certain degree of heat, and that they vary in coming forth ten or twelve days, in the same temperature and even the same species. This is known to be the case with the silkworm. And there is another consideration; harvest does not come to maturity at the expiration of a certain number of days every year, but may vary fifteen or twenty days, as it did this year. Therefore I would say, with the inspired penman, "in the morning sow thy seed, and in the evening withhold not thy hand, for who knoweth which will prosper, either this or that, or whether they both will be alike good;" that is give all diligence to be prepared to sow at the proper season, if the weather and other circumstances permit, but remember the old adage "better late than never." One observation more; insects generally are periodical in their appearance and depredations; not that they fulfil a certain number of years exactly, or that they appear but one year at a time; sometimes they continue several years in succession, and then disappear for a season; at other times they will appear and bear destruction with them for one season, and not be seen again for a number of years, as was the case with the Palmer worms, (so called,) that appeared in this vicinity, in 1831. With these facts before us, let us use every exertion to find a relief from the ravages of those insects we cannot destroy; relying on the blessing of a bountiful Providence. Industry and perseverance will do much, so much indeed, that "seed time and harvest will not fail;" and the poor of our land will be satisfied with bread.

Yours respectfully,

ASA CARTER.

Champion, Jefferson county, Sept. 28th, 1837.

GRAIN WORM, &c.

Stamford, Delaware county, October 1.

The grain worm, about which you inquire in the September No. of the Cultivator, has made its appearance in this vicinity, but it has done so little harm, that I probably should not have noticed it, had I not seen its ravages in Schoharie, and examined several pieces of wheat in this neighborhood, to ascertain whether it was here or not. I found but very few of the worms, and those were in spring wheat, some of which was sown about the first of May, and some as late as the 15th of the same month.

There was very little winter wheat sown in this place last season; but spring wheat and oats are uncommonly good. The latter are becoming an important crop to the farmers in this county, owing to large quantities being kiln-dried, ground, and the oat-meal made into hasty-pudding, which I believe is generally considered fully equal, if not superior, to that kind of "hasty pudding," whose praise was so well sung by Joel Barlow.

Yours in haste,

A. COWLEY.

COTTON.

J. BUEL, Esq.—Dear Sir—Although cotton, as we learn from Pliny, was cultivated at an early period by the ancients; yet it is scarce thirty years ago since this valuable plant began to be grown extensively in the United States. But now our cotton commands the highest prices, both at home and abroad. Besides the increasing demand for domestic consumption, thousands of bales are exported annually, especially to Great Britain, and returned in those beautiful fabrics for the production of which her ingenious manufacturers are so justly famed. Hence the raising of cotton has, in the southern section of our Union, become an extensive and a lucrative trade.

I have read several articles on the subject, but they have all appeared unsatisfying; partly because they were confused, but principally because they were not founded on *practical data*. My object, therefore, in addressing you is, through your widely circulated journal, to solicit from some of your experienced cotton-growing correspondents, clear and concise answers to the following queries, viz.:

1. What soil and climate is the most suitable for the culture of cotton?
2. What kind of seed is found in the southern states to be the most productive and profitable?
3. What is the best method of, and the best time for planting?
4. What tillage must precede and succeed the planting? Can two crops be obtained in a season?
5. When, and how should it be gathered; and how can it be most expeditiously cleaned, pressed and prepared for manufacture or exportation?
6. What is the fair average yield, the cost of culture, of bagging, of machinery, &c. and the nett profit per acre? A numerical statement is desirable.
7. To what dieases is the cotton plant of our country liable; and how may they best be remedied?
8. Is the soil and climate of East Florida, say 50 miles southwest of St. Augustine, adapted to the growth of cotton; and what kinds?

Should the above queries meet the eye of any practical and experienced planter, he will, by answering them, not only confer a favor on many of his brother planters, but will, at the same time, encourage the growth of an invaluable domestic staple.

Each succeeding number of "The Cultivator" I peruse with increasing interest and gratification. The contents are alike varied and instructive—pertinently illustrating its excellent motto, "TO IMPROVE THE SOIL AND THE MIND." It should, therefore, be the manual of every farmer—the directory of every gentleman who would cultivate the soil.

Yours respectfully, L*.

Princeton, (N. J.) 16th Nov. 1837.

SIBERIAN SPRING WHEAT.

Utica, November 10th, 1837.

Mr. BUEL,—The lively interest that you have heretofore manifested in relation to the wheat crop, which holds such an important rank in agriculture, induces me to furnish you with some additional remarks, which I have gathered from another year's experience with the Siberian spring wheat.

The first week in May I sowed six bushels of clean seed upon four acres of ground, which had lain to pasture four or five years, and planted with corn upon the furrow the preceding spring—the corn gave a poor return, on account of the unpropitious season—the character of the season past, and the condition of the ground, were both favorable—the growth of the crop corresponded. I saw it several times during the summer, and was (perhaps too much) gratified with the prospect of the final result. I was at the farm about the middle of July, when the process of vegetation was in its pride, and the kernel in that stage which the farmers denominate the milk; a cloud came over the field with heavy thunder, much rain and more wind, which prostrated the whole crop, and that in all directions. From this disaster (occurring when in fullest leaf, and perhaps heaviest head) it never recovered but partially. We however harvested some of it with the cradle, but much more with sickles, and with all a sad and wasteful gathering necessarily resulted, and from its long prostrate condition, much of it over the whole field was shrunk more or less, according to the degree of prostration. From waste and shrinkage I apprehend we could not have suffered less than ten per cent loss, besides it was all threshed during the rainy season of the last week in October, and the first week in November, by which we suffered some further loss; and yet amid all these drawbacks, we obtained between thirty-six and thirty-seven bushels to the acre. The seed, when sowed, was remarkably clean, berry full and perfectly dry, and weighed sixty-eight pounds to the bushel. So much for the productiveness.

By way of experiment as to time of sowing, and different strengths of soil, I reserved a small quantity of seed, and sowed one part of it the middle of May, on the side of my pea-field, on land originally good, but much exhausted by at least ten years' tillage, without a holiday. This was a fair growth, bright straw, and fair berry, and was, I should judge, equal to twenty-four bushels to the acre.

The remainder of the seed I sowed adjoining my white bean crop, on land not long in tillage, but naturally thin and unproductive. The straw grew well, and I began to think the Siberian wheat would grow on any soil, and might be sowed at any time, but at the harvest I was corrected; the straw, although not rusty, yet totally destitute of lustre, and the heads were poorly filled, and kernels badly shrunk.

The foregoing comparisons are Siberian with Siberian. I will now add a few observations, comparing Siberian with Italian and other kinds of wheat.

The proprietor of the farm adjoining me on the south, took much pains

to obtain, from a neighboring county, the Italian spring wheat. At a distance of, say fifty rods, south of my field, he sowed about three acres, at or nearly the same time that I sowed my first piece, and like mine, after corn, and in fine condition. His was a far less growth, and some time before harvest it was (as farmers say) struck with a rust, which so far shrunk the kernel that he did not harvest all his field.

The proprietor of the next adjoining farm to the one last mentioned, still south, obtained from me seed for one acre, (which was all I could spare,) he also procured from the last mentioned farmer Italian seed for two acres more. He sowed the two kinds the same day, side and side, in good season and fine order, and like his neighbor's and mine, after corn. The grow of the Siberian was perceptibly the most luxuriant; the straw bright and lustrous, the berry full, whilst the Italian was very rusty, with some smut, and the kernels badly shrunk. The proprietor judges that the Siberian will give him at least double the number of bushels per acre, and of double value per bushel.

The proprietor of the farm adjoining me on the east, sowed of the same Italian seed, about six acres, like all the preceding pieces, after corn, in fine season and good order, land somewhat exhausted by tillage; it was on the road side. I saw it several times during the summer, the growth middling, but as the harvest approached it lacked lustre, and the berry was not full. I should judge eighteen bushels per acre is all that can be expected from the field.

I furnished a Quaker friend in my vicinity with a bushel of seed. He then informed me that he had procured a bushel of very highly recommended Italian seed from an adjoining town, together with another bushel from a still different source, the name of which he could not recollect, in order to test their comparative merits. Last week he called upon me to let me know (as far as he could before threshing) the results. He said he sowed the three kinds the same day, on the same soil with the same tillage. The growth of straw not materially different the forepart of the summer, although evidently in favor of the Siberian as the harvest approached. The Siberian came in with a bright and lustrous straw, with full heads and plump kernel, but a few days later than the other kinds. The Italian almost ruined with smut. The other kind the straw very rusty, kernel badly shrunk, with some smut. He says he thinks he shall thresh nearly or quite forty bushels from the one bushel of Siberian seed.

One comparison more, and "although last perhaps not least." In the same field with my Siberian, I summer fallowed seven acres, and sowed the previous fall with winter wheat. It suffered severely by the winter, but after a long time there began to show some surviving plants, which spread and grew luxuriantly, and finally gave a return, as we judge, (not having threshed only as we have wanted for use,) twenty bushels per acre. This part of the field was protected from the storm, which prostrated the other, by a wood on the westerly side. About ten days before harvest it was overtaken by a rust, remarkably dark, but came too late to affect the berry. It was surprising to see, side and side, (for they were not even separated by a fence) the straw of the one kind as white as silver, and the other as brown as that of buckwheat. Another fact which claimed my attention, was that of a strange bug, of the size and shape of a bed-bug, having wings encased, but showed no disposition to use them. They were astonishingly numerous, covering literally the straw near the heads of wheat, and thick upon the heads themselves, but not a bug on the Siberian to be seen. Whether those are the harbingers of the grain worm or not I do not know, but whatever be his errand he has no message for the Siberian.

THOMAS GOODSELL.

REMARKS.—The above communication from our friend, Dr. Goodsell, goes to assert a very important fact, viz. that the straw of the Siberian spring wheat escapes the rust, where the Italian and other varieties are subject to it. This fact, if confirmed by future experiments, is of invaluable importance to the farmer. We have had but one opportunity of comparing samples of the Siberian and Italian wheat, of the crop of the last season, and in this case, we confess, the superiority seemed rather in favor of the former. Whether this arose from the effect of rust on the Italian, and from the Siberian being exempt from this malady, or from difference in soil, we are not prepared to say. We should like to satisfy ourselves as to the relative merits of the two kinds of wheat; and if Dr. G. will send us a bushel of Siberian seed, we will make the experiment fairly, and publish the honest result. ☞ Siberian and Italian wheat may be had at W. Thorburn's Seed-store.—*Cond. Cult.*

VALUE OF APPLES.

J. BUEL, Esq.—Sir,—Having made an experiment in feeding my fatting hogs thus far with apples the present fall, I am so well pleased with the result, that you are at liberty to make the communication through the Cultivator to your subscribers, as to my manner of preparing them for feeding. I have a two barrel chaldron set for boiling, with a cover to prevent the escape of the steam, which I fill with apples, adding two pails of water, and after boiling a short time, the apples become settled, so that I add from two to three bushels of cut pumpkins. When all becomes soft I add one bushel of ground feed, (peas and oats mixed,) generally by putting it immediately, or soon after, into the chaldron and well mixing it together, by which means the ground feed becomes perfectly cooked. After remaining a few hours, I have it placed in half hogsheads, where it remains from thirty-six to forty-eight hours before it is fed; by that means it has a perfect chance to ferment, which I consider very essential. It is true I have not compared weights with other years, but as far as my eye is a judge, I never had hogs do better for the same length of time in any former year, when I have fed them boiled potatoes, adding the same quantity of ground feed; and am satisfied that even sour apples are worth as much as potatoes in fattening pork.

Much has been said through your valuable paper as to the saving made in cutting straw and hay for fodder. I wish to inquire through the Cultivator, whether straw is fed to neat stock, when cut, without any mixture, such as bran or other kinds of mill-feed; and whether there is a sufficiency of nutriment in itself, and a sufficient quantity will be eaten to keep stock in good condition without the addition of a mixture.

A SUBSCRIBER.

Brunswick, Rensselaer county, November 14th, 1737.

DISEASES IN CATTLE.

DEAR SIR,—I have not lost, from sickness, but one horned creature for more than twenty years; yet I do not know whether I should attribute my success to good fortune, or to the manner of managing my cattle. I will give my practice, and if others should be benefitted, I shall be sufficiently compensated. The first requisite I consider to be plenty of good feed. The next thing to be attended to is the tail soak, which makes them liable to take cold, and produces the hollow horn and other diseases. The tail-soak may be known by the hair in the bush of the tail being rolled or twisted; when this is the case, the animal will not thrive or grow as well as when clear of it; it is frequently observable in calves.

Cure.—Cut off the end of the tail until you find the bone; it should be done when the weather is mild, and attend to it to prevent the too great a loss of blood. A quart or two of new chamber lye frequently given to each creature is a great preventive of disease.

Cure for Hollow Horn.—The pill recommended by your Ohio correspondent is much used in this town with success; but I prefer a tea-kettle full of water, boiling hot, poured from the spout upon the horns of the animal, having the nose held aside to prevent injury. It operates upon the same principle as immersing a person's feet in warm water, and frequently causes profuse perspiration, and the animal should be kept from very chilly winds for a few hours, and give from one to two ounces of flour of mustard.

Cure for the Fouls—either kind.—Cleanse the foot by washing or with a rope, and sprinkle upon the affected part half a tea-spoonful of blue-vitriol. For the peth-fouls put blue vitriol into the affected part on a probe or knife. Blue vitriol will also cure the hoof-ail in horses, if applied as above and a tarred rag put on to keep out the dirt.

Cure for Hoof-ail in horned cattle.—Cut off the point of the hoof until it bleeds.

Cure for Scours in cattle or horses.—Boil white oak bark, white pine bark and beech bark, and give it to them in bran if they will eat it; if not, pour it down. The oak is an astringent, the pine is healing, and the beach cures the inflammation.

Cure for Garget.—Give scoke (or garget root) a piece as large as your finger, grated and given to a cow in any thing she will eat; it is very efficacious. It grows from three to six feet high, with a purple stalk, and strings of berries growing from between the branches. It is said to be poison to a horse. It will cure those painful, unwelcome visitors, fellons on your finger, in any stage of them, if grated and put on cold and changed often. It is good for many other swellings.

Cure for a Cork in the foot of an ox.—Put on British oil.

It is thought to be sure death for a horse to be kicked in the stifle; but if you should have one in that situation put in plenty of fine salt and nothing else. Try it. The creature that I lost was a steer, nearly one year old; he bloated and soon died for want of a remedy; will some person communicate one? as it is quite common for cattle to bloat and die in this vicinity.

Yours with respect, &c.

PLINY L. EVANS.

P. S. If any horned creature should have a film growing on the eye, caused by a hurt, put in fine salt, it is a sure cure, but rather harsh.

Bolivar, Allegany county, New-York, September 2d, 1837.

Tyre, September 28th, 1837.

DEAR SIR,—We had considerable frost on the morning of the 21st inst. and again on the morning of the 24th, which did considerable damage to late fields of corn. The seasons of late have become so precarious for raising that crop, that I would advise my agricultural friends not to attempt to raise any more than what they can get in in season, and cultivate in the best manner. Corn, in this section, should be planted as early as the tenth of May; the ground should be made mellow, and a shovel full of fine manure applied to each hill before planting; this gives it an early start, and sends it forward, so that it is not liable to be cut off by the early autumnal frosts. I have heretofore been in the practice of spreading my coarse manure over the ground, turning it under, and planting on the top; good corn can be raised in this way, and some labor saved; but there is one ob-

jection, it takes so long for the roots to penetrate to the manure, so as to draw any nourishment therefrom, that it will be at least two weeks later in getting ripe, than corn planted in the method above described. Like the animal creation, it needs the most nourishment and care when in its infant state.

Peas make a very good substitute for fatting pork, and they leave the ground in good condition for sowing wheat. I would here mention a little circumstance, that others may profit by my loss: I had heard it suggested that peas would do equally as well, if not better, to sow them on the ground before breaking up, and plough them in. I tried on a part of my field, which was wheat stubble, and the result was, that not more than two-thirds came up at all; and what did, came very irrregular, and were at least one week later than the rest of the field, which I sowed on the furrows, and harrowed in.

All kinds of summer crops have done tolerable well; potatoes and oats, especially late sowed buckwheat, has been somewhat injured by the frost. I think farmers would do well to sow their buckwheat previous to the middle of June, it is more liable to be injured by the frost than by the sun.

P. M. *Tyre.*

WINTER WHEAT SOWN IN SPRING.

Snow-Hill, Md. October 26, 1837.

J. Buel, Esq.—Sir,—I have thought that the following might not be unacceptable to the Conductor of such a paper as yours:

The tenant on one of the farms of Lemuel P. Spence, Esq. of this county, seeded about one bushel of common red chaff winter wheat, on or about the 1st of March last, which sprang up and and grew luxuriantly, and came to perfection about seven to ten days later than is usual, when such grain is seeded in the fall, say September or October. The product of this bushel of wheat was ten bushels, the grain very fine indeed. It was seeded in land rather poor than otherwise, the soil by no means close but rather sandy. It was an experiment of the tenant, not with a view to a great crop, but to ascertain whether such wheat, seeded in the spring, would form perfect grain. Had the soil been clay and rich, the crop must have been very large. This farm lies open to the Atlantic.

Respectfully, GEORGE HUDSON.

DUTTON CORN IN OHIO.

Fairfield, Ohio, September 19, 1837.

J. Buel,—The Dutton Corn and Italian Spring Wheat you sent me by order last spring to Philadelphia, came to hand about the 20th May. Some of the corn was planted as late as the 1st of June, and is now sufficiently ripe to cut, while the corn we have been in the habit of planting from the 10th to 15th of May, remains soft, owing to the wet and coldness of the season. From the appearance of the Dutton corn it will suit our climate better than any other variety we have had, or been in the habit of planting. The spring wheat, owing probably to the lateness it was sown, and the wet weather at the time of making the grain, was so much struck by rust, that the crop will be light, though we are determined not to give up the ship.

I would be pleased to see in the Cultivator some directions for rotting and dressing flax, in the Irish manner.

Yours, M. MENDENHALL.

J. Buel, Esq.—Dear Sir,—If you think the following worthy a place in your paper, you are at liberty to give it an insertion. I raised this season, on three-fourths of an acre of ground, on my farm in the township of Oxford, Warren county, New-Jersey, the following crop of ruta baga: weight of roots 20,888 pounds, tops 7,296, making in the whole 28,184 pounds, which is the greatest yield I have heard of.

Yours, &c. WILLIAM TAYLOR.

SEEDLESS APPLES.

Ridge Prairie, Madison co. Ill. November 7, 1837.

Mr. John C. Riggin, of this place, has two very large apple trees, the fruit of which contain no seeds, and a very small core. The apples are sweet, and of a most delicious flavor. The trees are supposed to be seedlings. They were barren till a few years past, when they were made to bear by cutting and hewing through the bark and alburnum, on three or four sides of the trunk.

Yours,

J. Buel, Esq. GEORGE CHURCHILL.

LIVE FENCES.

Dear Sir,—We are beginning to make some improvements in this county, and many farmers see the necessity of taking measures to restore their exhausted soils. But much is to be done. The reckless exhaustion of timber and soil is already felt as a serious inconvenience in many parts of our county, and the question of supplying these deficiencies, is beginning to be seriously considered. The renovation and preservation of soils is very ably and fully treated of in the Cultivator; but the defect of timber for fences I do not think is so will considered by many of your correspondents. I have fully tested (thus far) the practicability of making live fence, and have no doubt but that it will succeed, and that it will be found to be the cheapest fence, of a permanent kind, that we can make. I have a hedge of about thirty-six rods long, the greater part is of the honey locust, which I grew from seeds. And as I observe that many complain that their seeds do not grow well, I will mention my practice to cause them to germinate. I diluted half an ounce of nitric acid in two quarts of water, having it a little warm, and in this I steeped the seeds twenty-four hours; then (about the last of April) planted them in drills; many of the plants appeared in three or four days; the earliest were cut off by late (May, 1834,) frosts, but enough came up afterwards to make me a fine nursery. The next spring I planted them in a double hedge row, about six or eight inches apart, where they have now had three summer's growth, and many of them are now more than an inch in diameter, and would have been six or seven feet high had I not cropped them down. Of their success I have no doubt. Yet I fear there is one objection to the honey locust, that the roots, which pass out into the wrought ground and are cut off, will send up troublesome shoots, to the annoyance of the cultivator and the injury of other crops.* Obviate this difficulty, and the honey locust for a hedge against the world. I have also our native white thorn, which I think will do well, but grows slower than the locust. I have also the English thorn, which in many respects is greatly inferior to either of the preceding. I do not observe that the winter affects it here, but still it is a tender little affair.

I hope my hedge will be a sufficient protection to my inclosure in two or three years more. I design to plant the prepared seeds around a pasture lot of three acres next spring, but will dig a ditch in the inside some three feet from it, to obviate the objection of the roots sprouting. I have never tried the effect of diluted nitric acid upon thorn seeds, but feel confident it will cause them to germinate in a short time. The reason such seeds do not grow as soon as any other seeds, is that they are incased in a hard shell, impervious to air and moisture, so necessary to swell the lobes or cotyledons, and even if they could swell, they might be unable to break their hard envelope. This beneficent provision of nature prevents the world from being overrun with thorns, as the seeds must lie in the earth a long time before they naturally germinate, the kernel generally rots before the shell is sufficiently softened to be burst by it. The effect of the nitric acid is to cut or decompose the shell, and no doubt the oxygen of the acid accelerates the germination. Other objections are made to the honey locust, which I think are not well taken; one is, that it grows too large; suppose it gives you a fence of a solid tree all around, is that any grievance? Its height you must regulate as you would any other hedge, with your shears. Another is, and this applies to hedges of all trees, as well as to this, that standing so thick upon the ground, they will be killed by one severe drought, for want of moisture. My hedge grows upon a gravel bed, and the summers of '35 and '36 were exceedingly dry, and the trees then thrived as well as any solitary trees in the inclosure. I intersperse roses and sweet briers in my hedge, which thicken it where required, and add much to its beauty in the blooming season.

Yours truly, J. DILLE.

Newark, O. November 14th, 1837.

GREAT CROP OF CORN.

Georgetown X Roads, Kent Co. Md. Nov. 4th, 1837.

Mr. Editor—Dear Sir—I have just finished measuring the corn that grew this year on a lot of mine of 5⅛ acres, and have measured 105½ barrels and one bushel of ears, making 103 bushels of corn per acre. The corn is called Semman's corn; it is a deep yellow, and not a gourd seed, but a very deep grain and small red cob, has from 18 to 24 rows on the cob. I have taken great pains in selecting my seed for the last three years. I threshed off 320 bushels last May, and found from measurement it measured from the barrel 5 bushels and ⅞ of shelled corn. The following is the manner in which I prepared the ground, &c. The soil is a stiff clay: 1½ acres of said lot was in clover last year, the balance in wheat. I put 265 two horse cart loads of barn yard manure on it: the manure was coarse, made out of straw, corn tops and husks, hauled in the yard in January and February and hauled out in March and April, consequently was very little rotted. I spread it regularly and ploughed it down with a large concave plough, (made by G. Cox of Middletown, Delaware,) 7 inches deep. I then harrowed it twice the same way it was ploughed. I then had the rows marked out with a small plough, 3 feet 10 inches wide and 1½ inches deep. I planted my corn from 18 to 22 inches apart and covered it with hoes: just drawing the furrows over the corn, which covered it 1½ inches below the surface. When the corn was 4 inches high I harrowed it, and thinned it to 2 stalks in the hill: in about 2 weeks after harrowing I cultivated it: about the 15th of June I cultivated it again, which was all the tillage I gave it. We farmers of the Eastern Shore count our corn by the thousand: I had 38,640 hills on my lot, and I think my corn would have been better if I had planted earlier: I did not plant until the last of April. I think the planting of corn shallow and working it with the cultivator is much the best way, especially on clover lay. If you think the above worthy of notice you will please give it a place in your valuable paper.

WILLIAM MILLER.

* This will not happen—the honey locust never sends up succors from the roots.—*Cond.*

EXTRACTS.

[*From the Maine Farmer.*]

RULES FOR SELECTING SHEEP AND BEASTS.

Mr. Holmes—The exhibition of the various kinds of stock at the late cattle show at Winthrop, is the surest evidence of the increasing interest in our farmers to improve their qualities: and much praise is due to the trustees of the Kennebec Co. Ag. Society, for premiums offered by them; as these premiums had their share in producing great exertions to promote the views of the society.

Six lots were entered for the premiums offered by the society; "on the best lot of lambs, not less than four in number, from *any* cross, forming a breed, which shall unite in the greatest degree those qualities which shall produce wool and *mutton*, in the most profitable manner." The first premium was awarded to Mr. J. W. Hains, "for four lambs of the *same breed* as those exhibited by Mr. Vaughan," and the second premium to myself, for "four lambs from ewes of my mixed breed, sired by a *full blood* South Down buck."

These different experiments, if repeated and varied, must result in securing to our country the most profitable breed of sheep, and well suited to domestic use. Breeds that will unite in the best shape, good constitutions, good breeders, and a superior disposition to fatten on the least food.

Notwithstanding the royal patronage of George the third, who imported a flock of merinos from Spain, there are very few merino flocks in England. The fine wool, for the manufacture of the finest cloth, is obtained through importations. The improvement in the breeds in England, has been made by the crossing of the various kinds already in the country, and in the judgment used in selecting the kinds for these crosses. Mr. Bakewell, who has deservedly the reputation of having arrived at the greatest perfection, by selecting the proper animals to cross with the Leicester breed of sheep, has given to the heavy fleeces of combing wool, mutton of a superior quality. Out of 16 different breeds, classed according to quality, the Dishley breed stands No. 1, in the class of combing wool, and the South Down is No. 1, in the class of shearing wool. The merino is the last on the list.*

I shall now proceed to the first object I had in view in making this communication. It was to furnish the rules, used by Mr. Bakewell, and the most eminent breeders, which enables them to make their selections of the most profitable animals. The extracts which I offer are taken from *Young's Annals*, and may remove the difficulty of deciding on the quality of mutton in sheep, without the use of the "*knife*" or the "cook," as expressed by the committee on sheep, in the report on the various lots of lambs offered for the premiums.

These extracts will clearly show that Arthur Young, Bakewell, and other eminent breeders, did not use the sense of *taste*, but trusted to the use of the two senses of *seeing* and *feeling*, and more particularly the *latter*.

Though this article has a reference to sheep, yet as the same general principles apply equally to cattle and sheep, those points described as essential in beasts, we give here.

Mr. A. Young, in a tour through some of the agricultural counties, visited Mr. Bakewell and explains,

1. "The general principles, which guided Mr. Bakewell, in breeding a beast or *sheep* for the butcher, and at the same time explains his own stock, which is in the highest perfection, when examined with an *eye* to these principles.

"In all his exertions, his aim was to obtain that breed, which with a given amount of food, will give the most profitable meat, that in which the proportion of the useful meat to the quantity of offal is the greatest.

2. "Points of the beast. On this plan the points are those where the valuable joints lie, the rump, the hip, the back, the ribs, and after these the flank; but the belly, shoulder, neck, legs and head should be light, for it a beast has a disposition to fatten, and be heavy in these, it will be found a deduction from the more valuable points. A beast's back should be square, flat, and straight, or if there is any rising it should be from a disposition to fatten, and *swell about the rump and hip bones*, and the belly should be quite straight, for if it swells it shows weight in a bad point. He prefers to have the carcass well made, and showing a disposition to fatten in the valuable points. So far on *seeing*.

3. "Feeling. Mr. Bakewell, to judge whether a beast has the right disposition to fatten, examines by *feeling*. His friend, Mr. Culley, who has had an infinite number of beasts go through his hands, agrees entirely with Mr. Bakewell in this circumstance, and when with him in Norfolk and Suffolk, was surprised to find *lean* bullocks and *sheep* were always bought there by the *eye* only. So *absolutely necessary is the hand in choosing either*, that they both agreed, that if they must trust to the *eye in the light*, or to the *hand in the dark*, they would not hesitate a moment in preferring the latter. The form of the bone in *sheep* is quite hidden, it is the hand alone that can tell whether the back is flat and broad, and free from *ridge* in the back-bone; or can examine correctly, if the other points are as they should be. *The disposition to fatten is discovered only by feeling.*

"Speaking of sheep particularly, the points to examine are the same as in an ox. Flatness, breadth of back, a spreading *barrel* carcass, with flat belly, and by no means curved and hanging. The essential is the carcass, and a disposition to fatten in the carcass, and perhaps to have the least tallow on the sides."

In a comparison between the Norfolk breed and South Down, it is the opinion of John Vise, butcher to Eton college, that "with respect to profit to the feeder, if they are fed entirely with grass, and upon good land, my opinion is decidedly in favor of the South Down; or if they eat turnips in winter, and after that are kept two or three months on grass in the spring, it is the same. But if they are kept fat against winter and are to be completed on turnips, the Norfolk is more profitable that the South Down." On this, Arthur Young remarks, that the profit here spoken of must be to the grazier and butcher, but not to the breeder, consequently is not so good to the public in general.

It is time to close, though much valuable matter remains to be noticed; I hope what extracts are given, will be found useful.

CHS. VAUGHAN.

* The maturity of the different breeds, and age for the butcher, ought to be noticed. The Dishley, South Down and Teeswater wethers are fit for the butcher in two years, 3 of the 16 at 2½ years;—of the others, 2 at 3½ years, and 6 in 4½ years. The merino in the list is not graded for mutton.

ECONOMY IN FEEDING.

There is, perhaps, no department in the business of agriculture so *little* attended to in this country as that of economy in the feeding of stock, and none which requires *more* attention. It has been demonstrated time after time that the mere bruising of oats, or corn, or the cutting of hay, adds fully one-third to their value as food: that is, that one-third less in quantity of either will answer. That this is the fact we have no doubt, and have long been surprised that so few persons, owners of stock, adopted this mode of feeding. No one who has watched with a discriminating eye the effects of feeding animals with whole grain but must have observed the fact that a large portion comes from them precisely in the same condition it was received by them into their stomachs. The reason of this is obvious: their stomachs have become so enfeebled, by being long used to unbruised grain, corn, or oats, as to be unable to digest the regular portions of these substances daily given them. This fact alone should bring about a reformation, as it is calculated to convince any one capable of drawing just deductions from well established principles, that all food which is voided in an undigested state, so far from having done any good, must have been the cause of much positive harm, as all bodies which lie in the stomach in that condition, are so many sources of irritation, derangement, and disease. But there is another view, which we do not recollect to have seen enforced—it is this: that by crushing or bruising all grain food given to cattle, the manure will be the more valuable. How often do we see a piece of ground which has been manured from the horse stable so covered with oats as to induce the belief in a stranger that *oats* had absolutely been sown, when in fact they had sprung from undigested grains which had passed through the horses. The trouble which such foul manure imposes upon the husbandman we need not mention, as sad experience has made every one intimate with it. If then one-third in quantity of grain can be saved; if that fed is more nutritious, if the manure made from it is cleaner and better, why should farmers and planters hesitate a moment? Why do they not at once abandon a practice so replete with evil? We leave the solution of these questions to those interested, and shall proceed to another branch of our present business.

What is the best food for horses in winter, economy considered?

Before we reply to this question we will premise, that we may set it down as a safe calculation, that the average yield of oats and corn throughout the United States is not more than 25 bushels to the acre. There are, to be sure, many districts of country in which there are numerous instances of quantities far above this produced upon an acre of ground; but then when we speak of the average for the *whole* country, we consider it would be unsafe to go beyond the quantity have named. In 25 bushels of grain there 200 gallons, and as the usual quantity given to a horse at a meal is one gallon, and he is fed three times a day, 25 bushels, or the product of one acre, will be 66⅔ days. Now let us see how stands the account with carrots. An acre of carrots planted on sandy loam well manured, say 20 double cart loads of short manure, if properly tended, that is thinned to the distance of 4 inches in the rows, and weeded and worked three times, will yield 300 bushels, and as there are 1,200 pecks in that quantity, and 3 pecks will sustain a horse a day, so will 1,200 pecks sustain him 400 days, or 4 horses 100 days, or 5 horses 80 days. The advantage of such product for winter feed we think so obvious as not to require further illustration. Every farmer knows that there are long periods of time during the winter months when the horses on a farm do but little work, and during these periods carrots are just as good for them as either oats or corn, and require but little more trouble in their preparation, for if they be not very large the horses will consume them without cutting, so that all they require is washing, a labor which can be per-

formed in 15 minutes for twenty horses. It is said that they are not as substantial food as either oats or corn: true they are not; but when horses are *idle* during winter, less substantial food will answer. Good hay and carrots will not only keep them in good heart, but *fat*, if they be properly attended to, are carefully watered, curried, and warmly kept. Carrots will keep buried in the open air from November till May, during all which period they may be advantageously fed to horses. The benefit which would arise to the farmer from such a course of feeding, will, we are certain, strike the most superficial observer, as it would enable him to sell more of his grain if he had a large surplus; and if the reverse, he would find his profit in the decreased demand upon his granary. It may, and doubtless will, be said that the culture of the carrot is a troublesome one; but on the other hand we affirm that they are no more so than *corn*, if the latter be well tended: they require *thinning*, so do corn, they require to be kept clean, so do corn, and we affirm without the fear of contradiction, that they do not require to be oftener worked, and as we have demonstrated that they will go nearly six times as far, we recommend their culture to the consideration of our readers, and in so doing, discharge not only a duty, but one which we feel assured will be well received, because well intended.—*Farmer and Gardener.*

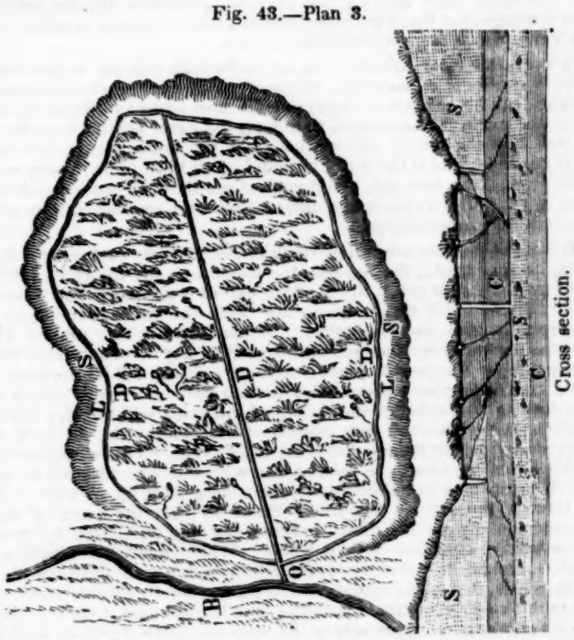
SMUT IN WHEAT.

That this prescription of brine and lime, or chamber lye and lime, will answer the end designed of preventing smut, we do not doubt; for the practice here recommended has obtained in Western New-York for more than twenty years, and we do not recollect a single instance in which it has failed where properly conducted. From whence the practice originated we know not; but in this state it was first adopted on the eastern shore of the Cayuga lake, and that region had, for a long time, the reputation of producing the finest wheat in the state; and it was extensively purchased for seed in other but less favorable districts. For a number of years past, smut has hardly been heard of, and seemed eradicated; and in consequence of the preparation of seed wheat by liming has fallen into disuse. It must be again adopted, where seed perfectly pure cannot be obtained, and even in such cases its use is safe, as it can possibly do no harm. It was at one time supposed by many farmers, that gypsum would answer the purpose of lime, for drying the brined wheat, and preventing smut, and in some cases was substituted for it. The result in the most of these instances, was, the evil appeared aggravated in a ten-fold degree. We have seen an experiment of this kind tried, that to us, was perfectly conclusive. A field was sown with wheat all brined, and with the exception of that required for a few lands, all thoroughly limed. The remainder was dried in plaster instead of lime, and sown the same day with that on which lime had been used. At the time of harvesting the line between the two kinds was distinctly marked, no smut being found on the part that was limed, while the plastered part was almost worthless. Spring wheat, it has been found by experience, is more apt to be smutty, than that sown in the fall, and hence the greater necessity of properly guarding against the disease. As many are intending to cultivate this grain to a considerable extent another year, the propriety of paying particular attention to this subject is evident, that the character of the region for wheat and flour, may not suffer. Whether in autumn or spring, we advise our farmers to be very careful as to what wheat they sow, and if there is the least danger of infection to apply the brine and lime at once. —*Genesee Farmer.*

DRAINING —(*Continued from page* 151.)

When the land to be drained lies flat, with rising ground on each side, and the breadth of valley is narrow, if the stratum containing the water which rises on its surface, forms part of the high ground on both sides, and is continuous below the soil of the valley, a drain carried through the lowest part, deep enough to reach the porous stratum, or, if the depth of the intervening strata is too great for a drain to be cut through, bore-holes or wells must be made in its bottom, which will have the same effect of drying the land without the necessity for cross and branch drains; this case, however, will not hold good if the valley is of any considerable width. Indeed, there are very few situations of this kind in Scotland,* where the extent of the ground to be drained is more than fifteen or twenty yards wide, but will require a drain carried through the centre or lowest part, to receive the surface water, and any springs which may arise out of the porous soil; and also another, on both sides, between the wet and dry ground, deep enough to cut off the water oozing out of the high ground, as shown in plan 3. If the surface water that flows into the hollows is considerable, the drain in the middle should be open, but covered in all other cases.

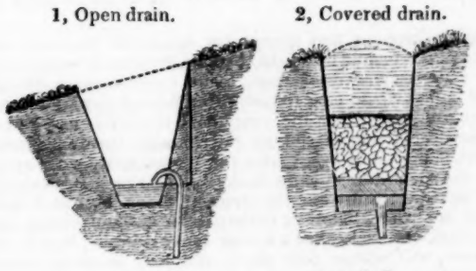
Fig. 43.—Plan 3.



In many instances in draining the sides of hills or sloping ground, it is necessary, on account of keeping the level and to save making more outlets than one, to carry the drain in some places below where the water first makes its appearance, or breaks out from the tail of rocks or other porous strata, and from it to make offsets the same depth as the drain, to the upper side of the wetness, (as shown in plan 4,) in order to dry the

Fig. 44.—Plan 4.

1, Open drain. 2, Covered drain.



3, Shoulder drain.

small spaces on the upper side of the drain, on which, from its locality, it can have no effect. Bore-holes would be useless in such a situation, where the sub-stratum is clay, and where there is no under water; and also if the drain was cut above or in a line with the upper springs, the depth of cutting would be too great to get hold of the water that injures the land below. These offsets are sometimes made in the form of the letter T, and sometimes they are carried all round the small wet spaces, but more frequently they are made as shewn in the plan.

* In many parts of England, the stratification lies so regular that a drain carried through a hollow part of a field, deep enough to reach the porous stratum, (which, in many instances, is composed of gravel, porous limestone, or chalk,) will dry a much larger extent of land than when the strata is so much broken as it is in Scotland; consequently, a person will have little chance of practising there to advantage without previously acquiring a knowledge of the variableness of the sub-strata, although he has had considerable experience and success in laying out drains in England.

DRAINING CLAY SOILS INJURED BY SUBTERRANEOUS WATER.

Although the wetness of this kind of land originates in many instances from the same cause as bogs, and the same principles are necessary for their drainage, yet there are other considerations required in order to effect a complete and cheap drainage of them.

In bogs, the water either breaks out in the high ground, or rises in the moss in the form of *welleyes*, which is easily discovered; but before a drainage can be effected in clayey soils, it must be looked for in the bowels of the earth. To ascertain, therefore, the exact depth where the water lies, and the quality and inclination of the strata, pits or bore-holes must be made; and if the water is found in all them to be nearly of the same level, it is a sure sign that it comes from the same source, but if the level of the water varies in the different pits and bore-holes, it evidently proceeds from different strata.

When the wetness originates from the first of these causes, two drains carried across a field, the one near the upper side, and the other half way down, will, in most cases, dry it, if the extent is not more than fifteen or twenty acres; but if the drains do not reach the water, bore-holes will require to be made in their bottom. When, however, the stratum which contains the water is composed of fine sand, or any other substance which does not allow it to pass through freely, more drains will be required, and also a greater number of bore-holes in their bottom. If the porous stratum does not lie far below the bottom of the drain, and the clay is soft, it is advisable to sink small *pits* instead of *bore-holes*, and fill them with small stones, before the conduit is laid; but if the clay is of considerable thickness and very hard, *bore-holes* may with safety be resorted to, as no apprehension need be entertained of their being filled up, for such is often the force of the spring, that it will throw up whatever earth or sludge may accidentally get into them, and they can only be injured by the sudden admission of surface or flood water. When water shows itself in the furrows, and, at the same time, is standing in the small holes on the top of the ridges, it is a sure symptom of its coming from a considerable depth; and in this case, the drain, where the land has the least declivity, should be carried along the upper side of the wetness, following all its windings, and cut to such a depth as will intercept the water from the land below; but if the land is flat, it must be taken through the middle, or where the springs appear to be strongest, and made four, six or even eight feet deep, according to the situation of the water and other circumstances, such as the level or direction in which the water has to be carried; and if the above depth does not reach the porous bed, the augur must be used.—When the water shows itself prominent in several places in the same field, and proceeds from different sources, a drain, with bore-holes if necessary must be carried through; or, if the ground slopes near the upper side of such parts, the depth of it must be entirely regulated by the circumstances of the case.

In all cases of draining, it is expedient to have as few outlets as possible, and, consequently, it is of great importance, in laying out drains, this should be particularly attended to; more especially where the water is scarce, it is of great advantage that it should be directed to the most convenient place, which will answer both for an outlet and a watering pond.

It frequently happens that springs (or spouts, as they are commonly called,) rise in the middle of a field at such a distance from any open ditch where the water may be discharged, that a covered drain brought from the nearest outlet, would have to pass so far through dry ground as to render the expense greater than the injury done by it; this may be remedied in some cases, by boring or sinking pits through the impervious bed of clay that lies immediately below, into the porous stratum, or by cutting a drain from the spout into a porous bank or shattry rock, through which the water will subside. But when the stratum, which the water is let down to, *tails out* any where below or farther down in the declivity, the water will again break out, and cause a similar *spout* or wet place in the field; this, however, will seldom take place, and may be easily remedied by means of another short drain. Before, however, any drainage is commenced on this principle, it is necessary to discover, in the first place, whether the porous strata immediately under the clay is dry and will absorb the water, or whether, being already full of water, it may, instead of receiving more, throw up a greater quantity to the surface, and thus increase the evil. The substrata may sometimes contain water, although, owing to the thickness of the clay, it makes no appearance on the surface, but which, being connected with some higher water, will flow up when a passage is given to it by the auger, and having no outlet through the circumjacent bank, it will render the land much more wet than before.

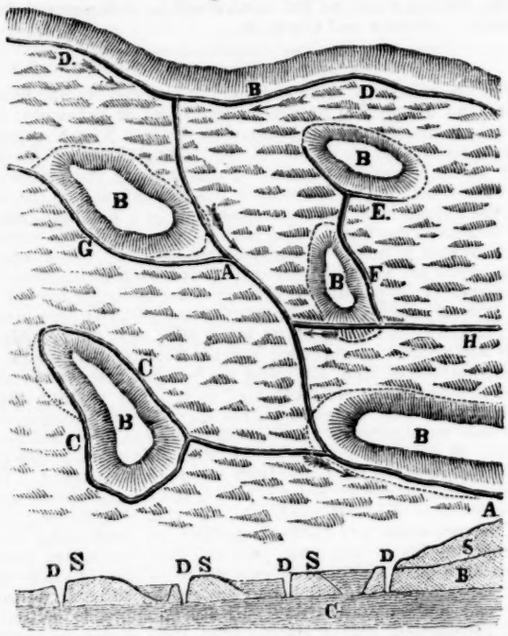
I could produce many instances of land being drained in this country agreeable to the above principles, but I consider this would be superfluous in this place, as the reader will find, in the account of the draining of Runnaby meadow, the principles so ably explained, and in such a practical manner as to give the most clear and satisfactory explanation of the cause of wetness in land, and the best method of removing it. Indeed, the success of this drainage, in a practical view of the subject, cannot be surpassed by any other that I could select from the many hundred cases of the same kind with which I have been engaged in this country.

DRAINAGE OF SOILS COMPOSED OF ALTERNATE BEDS OF CLAY AND SAND RIDGES.

Soils composed of an intermixed variety, and when clay predominates, are attended with much greater difficulty in draining than those in which both the surface and internal strata are more regularly disposed. In such soils, where every reservoir of water is unconnected with one another, being separated by means of clay beds or dykes, the partial collections of water which they contain are so much augmented in rainy seasons, as to be filled to the level of the surface of the surrounding clay, which it overflows, and renders it so wet and sour, that all kinds of crops are stinted in their growth.

As these sand ridges have no communication with each other, a separate drain is required from each, in order to reduce the water in them.—The outlet drain A, must be made from the lowest part of the field to the sand ridge situated at the highest and most distant part, and to be carried in such a direction as to touch, if possible, some of the intermediate sand ridges, (as shown in plan 5,) whereby a considerable extent of drain will

Fig. 45.—Plan 5.



be saved. From the outlet drain A, branches must be carried to each of the sand ridges B, which, when made sufficiently deep, will draw the water from them, and prevent it wetting the adjacent surface. Although the water oozes out all the way round the sand ridges, a sufficiently deep drain on the lower side will, in many cases, extract the water from both sides; but when the ridges are of considerable extent, and the sand of a very fine quality, so as not to allow the water to pass through it freely, the drain must be continued all the way round, as is shown at C.

In many cases, the whole of the wetness proceeds from the water in the upper sand ridge passing over the intermediate spaces of clay, and through the different ridges below. When this happens, the drainage of the whole field may be accomplished with much less difficulty than in the former instance. After the outlet drain A, has been made, the upper drain D, must be cut, which will intercept the water, and may, by this means, render the lower drains, C, E, F, G, H, unnecessary. It is evident from this, that the water breaking out of the sand ridge in the highest part of a field, may be the sole cause of injury to a considerable extent below; it is, therefore, expedient, in draining land of this description, that the water in the upper side of the field should be first cut off, and its effect ascertained before any more drains are made in the lower part.

There are other soils of a similar nature, the drainage of which is easier accomplished, on account of their alternate beds of clay and fine sand lying much more regular. Under the alternate beds of clay and fine sand, which are often almost parallel to one another, is generally found an impervious body of clay, which keeps the veins of sand full of water, moistening the adjacent clay and running over it. As the main body of clay is seldom more than four or five feet below the surface, a drain must be cut to that depth through the middle of the field, if it has a descent from both sides; and if the ground declines all to one side, two drains will be required, the one near the upper side, to cut off the water coming from the ground above, and the other near the lower extremity or lowest part, where the water in the different beds of sand will easily discharge itself. This, no doubt, will answer the purpose effectually—as the drains

cross the different beds that contain the water, they will draw it from each, unless the field is of considerable extent, or have more hollows than one, in which case a drain must be made through every hollow. In draining land of this kind, there is seldom any need for using the auger, as the necessary depth of the drains reaches the impervious body of clay, the thickness of which being so great, that any water that is confined below will do no injury to the crop.

Another description of land to which nearly the same treatment may be applied, is when the soil and sub-soil, to the depth of three or four feet, is entirely porous, having under that a strong body of retentive clay; the rain water falling on the surface subsides till it meets with the clay, and then being obstructed from farther descent, the whole mass of porous soil above is filled with stagnant water, which not only retards the operations of agriculture, but also vegetation. To remedy this, it requires only one or more drains, according to the situation of the field; and these require to be made no deeper than to reach a few inches into the clay, between which and the porous soil, the greatest part of the water remains stagnant, although it does not appear on the surface.* If the land has a small descent from both sides, a drain cut through the porous soil into the clay in the hollow will effectually draw off the water; but if the surface is undulating, as is often the case, it is necessary to make a drain winding through all the lowest places, and when it is almost level, or inclining to one side, the drains must be made across the slope, to some convenient outlet in the side of the field, taking care in running them, to give as much fall as that the water will run without standing still in their bottom. A particular account of the general dimensions and method of making drains adapted to such soils, will be found under the head of rumbling drains.

Much land of the above description, in various districts of this country, may be completely drained in the same manner, at a very moderate expense, by a proper attention being paid to the situation of the ground and cause of the wetness. Such land remains so long wet in spring before it can be sown, that the crop is either obliged to be cut green, or, in some instances, is lost altogether.

DRAINAGE OF CLAY SOIL INJURED BY SURFACE WATER.

Owing to a considerable portion of the ploughable land in this country being injured by surface water, or water lodged between the soil and subsoil, systems as various as the effects they produce have of late boen applied to drain such, and it therefore becomes a matter of the greatest importance that some definite rule be laid down, whereby a complete and permanent drainage may be effected in such land, and which, at the same time, will be attended with the least expense.

Tenacious soils are much more expensive to drain than any other, as the drains must be more numerous, in consequence of having to be laid out in such a manner as to collect all the water from the surface, which, from the imperviability of the clay, must, in many cases, discharge itself into them from above; and where there is any irregularity on the ground, the water will remain standing in the hollows of a drain is not carried through each of them. Drains for removing surface water from such land, when it lies flat, should therefore go the hollowest parts of the field, without any respect to straightness or regularity, and at such a distance from each other as will keep the surface of the land dry. When the soil and sub-soil are composed of strong clay, twenty feet between the drains may be fixed on as a general rule at which they will act; but when the clay is mixed with thin veins of very find sand, which is very often the case, thirty feet will answer completely. When the ground, however, has the least declivity, the drains should always be directed obliquely across the slope, or as directly across it as the nature of the surface and outlet will allow; the distance of one drain from another, in this case, depends on the decilvity, the proportion of sandy substance mixed with the clay, and the depth of the drain. Where soil is very tenacious and the declivity considerable, the drains will not act more than twenty or thirty feet; but where it is mixed with thin strata of fine sand, although the sand is hardly perceivable, the same depth of drain will act several times that distance.

The necessary dimensions of drains for removing surface water is found, from experience, to be from two and a half to three feet deep, sixteen inches wide at top, and twelve inches at bottom; and they should be filled with stones, broken to the size of road metal, in arable land, to within twelve inches of the surface of the ground; and in permanent pasture, such as lawn and pleasure ground, to within two or three inches of the surface of the ground. In all cases, after having covered the stones with some straw or turf, the remaining space should be filled with porous earth or sand, which, if it can not be found near the drain, should be carted to it, as they will be rendered useless if the impervious clay is again thrown into them.*

In coarse lands, where the ridges are generally very high and winding, the furrows between them, during a great part of the year, are mostly full of stagnant water, which, in many instances, destroy the crop half way up the ridges, the declivity of the surface of the land being insufficient to carry away the water. In such cases, drains are required in almost every furrow, according to the breadth of the ridges. They must be made about twenty inches deep, and the breadth of a common garden spade, and filled up with small stones or coarse gravel to within four inches of the bottom of the furrow; and if the land is very tenacious, the remaining space must be filled with porous soil. This practice, however, can only be recommended on coarse and other land of a similar nature; for it is evident that water within the earth, or on the surface, seeks a level where the fall through the porous soil is greatest; therefore a drain made across the slope or declivity of a field, or any piece of land, will undoubtedly intercept more water than when it is carried straight up the bank or rising ground; this principle holds good in every case, whether the drain be made to receive surface or subterraneous water. Drains winding across the slope or declivity of a field, whatever their number or depth may be, their effect upon tenacious or imperious sub-strata will be much greater than if they were made straight up and down the slope; and when the soil is mixed with thin strata of fine sand, which is the case nine times out of ten, the effect will be increased in proportion, and, accordingly, a much less number will answer the purpose, the expense will be greatly lessened, and the land and occupier much more benefited in every respect. The great error in the many systems of draining land now brought forward, is their universal adoption of running the drains straight up and down the slope in the furrows, instead of carrying them across it, and also in the smallness of their dimensions, without paying the least attention to the quality of the soil and sub-soil, and whether the wetness proceeds from surface or subterraneous water. It is quite impossible for drains that are only two or three inches wide at the bottom, and filled only ten inches high with broken stones or gravel, or laid with tiles covered with the impervious clay that has been taken out of them, more especially if they are made straight up and down the declivity, can have the same effect of drying the land as when they are carried across the slope and made of larger dimensions; neither can such drains be so durable, as they are much more apt to *blow*, owing to their small dimensions, when made up and down the slope, than when they are made the reverse way. This assertion is founded on facts and practical knowledge; and I am convinced that nine-tenths of the land that is attempted to be drained by furrow drains, would be much more effectually and permanently drained at half the expense, if proper means were employed. I have lately had many opportunities of seeing this verified; but one, in particular, drew my attention in a field near Glasgow, which had been furrow drained in the summer of 1832. I observed, in passing it in the following spring, tha many of the drains were already *blown*. The soil is of a sandy nature, and the ground has a considerable declivity to the south; which circumstances ought to have pointed out the necessity of deep drains, and having them carried across the slope, by which means a complete drainage would have been effected, and the permanency of the drains secured at a much less expense. Among many other instances of this kind which have come under my immediate observation, is a field of nine acres belonging to Lord Strathallan, in Perthshire, which was attempted to be drained some years ago. The soil and sub-soil were a somewhat stiff tenacious clay, mixed with thin veins of fine sand. No less than three hundred and ninety-six roods of drains, averaging from two and a half to three and a half feet deep, were run in straight lines up and down the slope, and filled promiscuously with stones, from the size of a man's hand to that of the largest ox's head. The first three or four years after they were made, the ground appeared tolerably dry, and produced a few middling crops; but, in a very few years, the drains were choked and *blown*, and the land became much less productive than it was even in its natural state, on account of the blown drains having formed springs where the land was perfectly dry before the draining attempted. The failure of this ill judged and ill-executed drainage, obliged the proprietor, in the autumn of 1830, to lift the whole of the old drains, as stated by the factor in the annexed note,† and renew the operations, by running the drains across the declivi-

* In the course of practice, I have met with many cases of this description, but one in particular, was at Lennoxlove, near Haddington. The surface of the land had every appearance of wetness, although not a single drop of water was to be seen on it, but, upon sinking pits eighteen inches deep, the whole porous soil, to the depth of four feet, (where a stratum of strong impervious clay was found,) was full of water, which had no way of making its escape but by evaporation through the pores of the soil.

* One of the greatest errors in draining is, in filling the drains above the tiles or stones with the same clay which has been taken out of them, and which, in two or three years, becomes as impervious as the adjacent land. On the Marquis of Abercorn's estate at Paisley, an extensive drainage is carrying on under my direction; and there the drains are filled above the tiles or stones with *peat moss or coal ashes*, which are found to be among the best materiels adapted to this purposee.

† "Sir,—The drains you lined off in November last are now executed, and the land appears completely dry. The expense of lifting the old drains, which were quite useless by being stopped and bursted, was as follows:—

For lifting three hundred and ninety-six roods of old drains, at 9d. per rood,	£14	17	0
For filling in the earth, at 1d. per rood,	1	13	0
	£16	10	

ty, whereby not only one hundred and fifty-three and a half roods of drains have been saved, but a perfect drainage of the field has been accomplished at less expense than the lifting of the original drains. Many other examples of the failures of drainages from the same cause might be adduced, but, from their similarity, I consider it unnecessary in this place; I have not, however, met with any case that has not been successful when the drains were carried across the slope and made of sufficient dimensions, and, amongst numerous others with which I have been engaged, I shall only mention one, which not only realized every expectation that could have been formed of it, but also was drained at one-third of the expense it would have cost if it had been done by the system of furrow draining.

This case was at Cleland, in Lanarkshire, the property of North Dalrymple, Esq. The field is of considerable extent, having a general slope to the south, and the soil is of a tenacious nature, intermixed with veins of fine sand. The drains are made across the slope, at the distance of twenty yards from each other, averaging three feet deep, and the breadth at the bottom is twelve inches: they are filled with stones, broken to the size of coarse road metal, to within ten inches of the surface, and the remaining space with porous soil. The outlets are made winding through the lowest places, and intersecting the cross drains. These operations were finished in the spring of 1832, and have not only given satisfaction, but may be recommended as a complete specimen of shallow draining.

It is evident, from the above statements, that the practice of putting a drain in every furrow, without discrimination as to the circumstances of the ground, is often a misapplication of labor and loss of capital; indeed, in many instances, where it can with propriety be used, the end would be much better attained by proper formation of ridges and furrows, combined with deep ploughing, so that no water can remain dead. I have often seen large tracts of clayey land intermixed with whitish travelled stones, lying in sub-soils perfectly impervious, effectually drained by means of trench ploughing, and keeping the furrows regularly deep from one end of the ridge to the other. If farmers occupying clayey soils would pay more attention to the formation of the ridges and furrows, and to keeping the open ditches and water *gaas*, or cross furrows, sufficiently deep to clear the surface of all stagnant water in the hollow parts of the fields, there would be much less necessity for making drains for removing surface water.—*(To be continued.)*

[*From the Practical Farmer.*]

WORKING OF OXEN.

Much difference of opinion, says the author of the Encyclopædia of Agriculture, formerly prevailed as to which of the two animals, the horse or the ox, should be preferred for the purpose of farm labor, and the preference has generally been given by speculative writers to the ox, and by practical farmers to the horse. The first objection to the oxen is, that they are unfit for the various labors of modern husbandry, for travelling on hard roads in particular, for all distant carriages, and generally for every kind of work which requires despatch. Another is, that an ox team capable of performing the work of two horses, even such kind of work as they can perform, consumes the produce of considerable more land than the horses. And as to the money price of the horse and ox, this, it is evident, is merely a temporary and incidental circumstance, which depends upon the demand.

Notwithstanding the judgment thus pronounced on this subject, we find in this country the practice and experience of many farmers to be directly at variance with it. In a communication of the Hon. Levi Lincoln, of Massachusetts, to the Secretary of the Pennsylvania Agricultural Society, he says: "You inquire the mode of *breaking*, *feeding*, and *working* our oxen.

"The best broken oxen are those which are early trained, and accustomed to the yoke with occasional light work. They are often broken at as early as one or two years of age, with gentle and patient usage. At this period they are more docile and tractable, and it is thought become more powerful by becoming sooner accustomed to each other, and to the application of their strength to the draught. I believe they may be taught to travel in almost any gait; certain it is, the rate at which oxen differently broken will walk with their load, would seem incredible to a person ignorant of the difference in the mode of their training. To accustom them to a quick pace, they should at first be driven to the yoke, while young, without any or with a very light weight, and never heavily loaded until they have arrived at full strength and maturity.

"A great fault with many people is too much indifference to the *construction of the yoke*. Almost any shapeless piece of wood, with holes for the insertion of the bows, is made to answer; but to the ease of the draught, the adaptation of the yoke or bow to the neck of the bullock, and the position of the staple and ring in the yoke, are altogether material. For common use and for ploughing, I have found that yokes are generally too short. Cattle of the largest size require a yoke from four and a half to five feet in length. In short yokes they are apt to *haul*, as is termed, that is, draw from each other, and to such a degree, in some instances, as to cross their forelegs, and destroy their power, and greatly impede their progress. I once owned a pair, made totally useless by this habit, and afterwards entirely corrected it by the application of a yoke of eighteen inches more length. A short yoke is necessary only in snow paths, where cattle would otherwise *crowd* against each other, the opposite of *hauling*, but of the same mischievous effect.

"In respect to what oxen may be made to do in a short time, or as an experiment on their strength, I must refer you to the results of our ploughing matches and trials of strength. With us they are but little used on the road, except in the transportation of heavy loads for short distances in the same town, or between neighboring towns. One reason why horses are preferred for wagoning on the road may be, that they can be made to travel quicker, and that from the construction of the hoof they are less liable to lameness than the cloven-footed ox, or by becoming foot sore. On the other hand, the patient and steady labor of the ox finds no substitute in the horse for the labor of the farm, and the latter is seldom seen there, except in occasional aid of the ox team, or with the light plough between the rows of corn.

"The value of a yoke of oxen or a pair of horses for use in all the work of a farm, admits of no comparison. So decided is the preference for the former that I do not believe a single farmer can be found in this extensive agricultural county, who performs his labor by horses without oxen; while there are *hundreds*, I had almost said *thousands*, who make no other use of horses in husbandry, than to furrow for planting, and plough among their corn for hoeing.

"Our oxen, also, to answer part of your inquiries, are kept in a cheaper and less expensive manner than horses. In the summer they are uniformly grazed in the pastures. In the cold and winter seasons they are put into the barns, and fed upon *stock* hay, as it is called, that which grows in meadows, and upon the fodder of corn stalks, husks, &c. unless, indeed, they are more severely worked than usual, when hay of better quality is given them; and in all cases as the spring advances their keeping is improved, and with better hay some grain is added. I speak of the general practice of farmers. There are some who keep their oxen more generously, and others more hardly than I have mentioned. But with a clean and warm stable, the daily application of the curry-comb or card, and coarse food, without severe labor, the best farms will at times exhibit teams of most vigorous and powerful cattle, and their best hay and their grain will be saved in their beef and pork, and in the produce of their dairies for the market.

"Oxen yoked to a cart are generally superior to horses attached to a wagon. The greater weight which may be carried by the former, and the facility with which it is removed, by *tipping up*, are of most striking advantage in the ordinary business of a farm. It is said that a cord of green oak or hickory wood is not an unusual load for a yoke of oxen to carry on a cart, while it would certainly require the power of three horses on a wagon. The estimate of relative expenses of keeping a pair of horses and of oxen, is in the proportion of three for the former, and two for the latter, and to this is to be added the value of the ox for beef when their strength fails for labor."

The expense of the new drains which you lined out were—

For cutting forty-four roods, five feet deep and coupled, at 1s. 3½d. per rood,	£2	16	10
For cutting one hundred and fifty roods, four feet deep, at 1s. 0½d. per rood,	7	16	7
For cutting forty-eight roods, four feet deep and built, at 1s. 1d. per rood,	2	14	0
For cutting level for said new drains,	0	6	8
	£13	14	1

The field is all ploughed and sown with oats. I am, &c.
To Mr. G. Stephens. PETER THOMSON, *Factor.*"
"*Castle Strathallan, 20th April*, 1831.

[*From the Franklin Farmer.*]

THE BEE MOTH.

Mr. Editor,—Having had some experience in the management of bees for several years past, during a part of which time my apiary has comprised twenty hives; and having been a close observer of the bee moth ever since its first appearance in this vicinity, I am induced to present a few facts which I have obtained by close observation, and which may probably assist some of your readers in checking the ravages of these destructive insects.

During the past summer I have kept a number of the maggots and the flies under glass tumblers and small boxes for the purpose of particular observation, and now write with one of each before me.

The moths are butter flies or candle flies, of a pale ashy color; and when full grown are about half an inch in length, with reddish backs, small sharp heads, short and delicate horns, and without a proboscis. Their wings are small and double, and when in a state of rest are kept close to the body. During the day they may be found sitting upon the retired parts of the outside of the hives, and may be easily taken with the fingers. About the dusk of evening and morning the females may be seen sitting with their wings extended, inviting the embraces of the males, while others are flitting to and fro, and occasionally one may be seen to

dart with great velocity into the entrance of the hive. The bees will not pursue the moths on the wing, and the moths far outstrip them in flight on foot. The moths live about ten or twelve days, during which time I cannot perceive that they take any nourishment whatever. The only object of their existence seems to be to deposite their eggs, which are small, round and white, and of which I have seen ten dropped in rapid succession. For this purpose nature has most skilfully provided them with a *sort of proboscis* about the sixteenth of an inch in length, which is contracted and protruded from their tails, and vibrated with great velocity, as wasps or hornets do their stings, which it somewhat resembles. With this admirable apparatus the eggs are deposited in places which are inaccessible to the bees, as they would be destroyed by a thrifty and a spirited hive. As soon as the young maggot casts it shell, it envelopes itself in a web which is closely attached to the hive or stand, and which is impervious to the bees. These webs are enlarged as the maggots grow, and they grow fast and fatten kindly, no matter whether a poplar or pine plank, or honey-comb and its delicious sweets, are the elements upon which they subsist and weave their webs.

From one experiment I am satisfied, that the maggots will attain their full size of half an inch in length, and the thickness of a large knitting needle in the short space of eight days: but of this I can speak with greater certainty hereafter, as I have now two lot of eggs under observation.

The maggots have tough, jointed, white skins, and hard oval black heads. They crawl but slowly, and rarely venture from under the protection of their webs; though they often pass, like moles, through the centre of a sheet of comb ten or fifteen inches in breadth, making a partial web over each cell in the route. Though the bees cannot I believe, penetrate the hides of the maggots, either with their teeth or their stings, still they can fight them and carry them out of the hives; and this they will do, when the hive is thrifty and in good spirit. I have often seen a maggot straighten himself and crawl off, apparently unhurt, after having been fought by several bees for many minutes; and I have seen the moths run over the bees and escape out of sight, by the time the bees had faced about to give them battle.

After a brief existence the maggot gathers his web close around him, becomes inactive, and gradually assumes a harder black shell, which it bursts and is again a fly in about twenty days.

I have been somewhat particular, thinking it important to know the habits and character of the insects, in order to know how to destroy them. I have tried in vain to disgust and drive them from the hive, by the use of turpentine, worm-wood, penny-royal, &c. I have tried confining the hive close to the stand, and plastering up all the crevices with quicklime, and I think the plan with tubes for entiance (an inch I first saw seggested in an eastern paper) might succeed, did it not require a nicety of material, and a precision of construction, which are not within the reach of ordinary bee-masters. After losing two valuable hives by relying upon the closeness of the boxes, I abandoned the plan, and have since tried elevating them upon blocks with better success. The zeal of your esteemed correspondent J. J. V. for his plan has led him into an error, of which a close look into a thrifty and spirited hive will convince him. He will see the comb surrounded and covered with such dense clusters of bees as no fly could penetrate: and any moth would conclude that it was far easier, (saying nothing of danger,) to lay its eggs in the lower and unguarded corners of the hive than in the more distant and frequented parts. All my stands have been more or less infested this year, and two which were but partly raised from the stand have been entirely destroyed; and, from daily observation, I am satisfied that the moths invariably at first, deposite their eggs in the lower parts of the hive, and chiefly where it sits upon the stand; whence the webs are gradually extended until they reach the comb. The bees then soon relax their industry, lose their spirit, and commence to eat their honey, in which other bees unite, and which may be known by unusual quantities of excrement about the hive. The moths and the maggots aree mboldened to greater intrusions: they boldly enter the inmost recesses of the hive, and soon the work of devastation is disgusting and complete. The bees, not having spirit to resent the intrusion, and not being able to prevent it, languish, die, or desert the stand.

In a future number, if you wish, I will give you an account of the plan I have practised during the present season, and which I think most susceptible of general practice and success.

Your friend, R. W. S.

Note by the Editor.—We wish our correspondent had added to the valuable information contained above, the account of the manner in which the depredator he so well describers, may be destroyed. The *evil* itself is indeed well described, and we wonder our friend did not point out the cure; especially as he knows his article in that shape, would have been more useful. Indeed, we had almost determined not to publish it until he added to it, the remedy of the evil. Let him, however, furnish his plan —he knows he is always welcome to our columns.

A SYNOPSIS OF THE IMPROVEMENTS IN AGRICULTURE.

We shall conclude with a few brief notices of some of the most prominent benefits and improvements which modern science has contributed to the art of agriculture. The husbandman of antiquity, as well as those o the middle ages, were destitute of many advantages enjoyed by the modern cultivator. Neither the practical nor the theoretical agriculturists of those periods had any correct knowledge of geology, mineralogy, chemistry, botany, vegetable physiology, or natural philosophy; but these sciences have given the modern husbandman the command of important agents, elements and principles of which the ancients had no idea. The precepts of their writers were conformable to their experience; but the *rationale* of the practices they prescribed they could not, and rarely attempted to explain. Nature's most simple modes of operation were to them inexplicable, and their ignorance of causes often led to erroneous calculations with regard to effects. We are indebted to modern science for the following among other improvements, viz: 1. A correct knowledge of the nature and properties of manures, mineral, animal and vegetable; the best modes of applying them, and the particular crops for which particular sorts of manures are best suited. 2. The method of using all manures of animal and vegetable origin while fresh, before the sun, air and rain, or other moisture, has robbed them of their most valuable properties. It was formerly the practice to place barn-yard manure in layers or masses for the purpose of rotting, and turn it over frequently with the plough or spade, till the whole had become a mere *caput mortuum*, destitute of almost all its original fertilizing substances, and deteriorated in quality almost as much as it was reduced in quantity. 3. The knowledge and means of chemically analyzing soils, by which we can ascertain their constituent parts, and thus learn what substances are wanted to increase their fertility. 4. The introduction of the root husbandry, or the raising of potatoes, turnips, mangel wurtzel, &c. extensively, by field husbandry, for feeding cattle, by which a given quantity of land may be made to produce much more nutritive matter than it it were occupied by grain or grass crops, and the health, as well as the thriving of the animals in the winter season greatly promoted. 5. Laying down lands to grass either for pasture or mowing, with a greater variety of grasses, and with kinds adapted to a greater variety of soils; such as orchard grass, *(Dactylis glomerata,)* for dry land, foul meadow grass, *(Agrostis stricta,)* for very wet land, herds grass, or timothy, *(Pleum pratense,)* for stiff clayey soils, &c. 6. The substitution of fallow crops, (or such crops as require cultivation and stirring of the ground while the plants are growing,) in the place of naked fallows, in which the land is allowed to remain without yielding any profitable product, in order to renew its fertility. Fields may be so foul with weeds as to require a fallow, but not what is too often understood by that term in this country. "In Englaud, when a farmer is compelled to fallow a field, he lets the weeds grow into blossom and then turns them down; in America, a fallow means a field where the produce is a crop of weeds running to seed, instead of a crop of grain." 7. The art of breeding the best animals and the best vegetables, by a judicious selection of individuals to propagate from. These improvements, with others too numerous to be here specified, have rendered the agriculture of the present period very different from that of the middle ages, when it had sunk far below the degree of perfection which it had reached among the Romans.—*Encyclopædia Americana.*

Young Men's Department.

NATURAL PHILOSOPHY.

The object of *Natural Philosohphy* is, to observe and describe the phenomenon of the material universe, with a view to discover their causes, and the laws by which the Almighty directs the movements of all bodies in heaven and on earth. It embraces an investigation of the laws of gravitation, by which the planets are directed in their motions—the laws by which water, air, light, and heat are regulated, and the effects they produce in the various states in which they operate—the nature of colors, sounds, electricity, galvanism, and magnetism, and the laws of their operation—the causes which operate in the production of thunder, lightning, luminous and fiery meteors, hail, rain, snow, dew and other atmospherical phenomena. In short, it embraces all the objects of Natural History formerly alluded to, with a view to ascertain the causes of their varied appearances, and the principles that operate in the changes to which they are subject; or, in other words, the laws by which the diversified phenomena of universal nature are produced and regulated. One subordinate use of the knowledge derived from this science, is, to enable us to construct all those mechanical engines which facilitate human labor, and increase the comforts of mankind, and all those instruments which tend to enlarge our views of the operations of nature. A still higher and nobler use to which philosophy is subservient, is to demonstrate the Wisdom and Intelligence of the Great First Cause of all things, and to enlarge our conceptions of the admirable contrivance and design which appear in the different departments of universal nature. In this view, it may be considered as forming a branch of *Natural Theology*, or, in other words, a branch of the religion of angels, and of all other holy intelligences.

This department of natural science has been generally divided into the following branches:

1. MECHANICS.—This branch, considered in its most extensive range, includes an investigation of the general properties of matter; such as so-

lidity, extension, divisibility, motion, attraction, and repulsion—the laws of gravitation, and of central forces, as they appear to operate in the motions of the celestial bodies; and on the surface of our globe, in the phenomena of falling bodies, the motions of projectiles, the vibration of pendulums, &c.—the theory of machines, the principles on which their energy depends; the properties of the mechanical powers,—the *lever*, the *wheel*, and *axle*, the *pully*, the *inclined plane*, the *wedge*, and the *screw*, —and the effects resulting from their various combinations. From the investigations of philosophers on these subjects, we learn the laws by which the great bodies of the universe are directed in their motions; the laws which bind together the different portions of matter in the surface of the earth, and which regulate the motion of animal, vegetable, and inanimate nature; and the principle on which cranes, mills, wheel-carriages, pile engines, threshing machines, and other engines are constructed; by means of which, man has been enabled to accomplish operations far beyond the limits of his own physical powers.

Without a knowledge of the laws of motion, and assistance from the combined effects of the mechanical powers, man would be a very limited being, his enjoyments would be few, and his active energies confined within a very narrow range. In a savage state, ignorant of manufactures, agriculture, architecture, navigation, and the other arts which depend upon mechanical combinations, he is exposed, without shelter, to the inclemencies of the season; he is unable to transport himself beyond seas and oceans, to visit other climes and other tribes of his fellow-men; he exists in the desert, comfortless and unimproved; the fertile soil, over which he roams, is covered with thorns, and briers, and thickets, for the haunt of beasts of prey; his enjoyments are little superior to those of the lion, the hyena, and the elephant while he is much their inferior, in point of agility and physical strength. But when philosophy has once demonstrated the principles of mechanics, and introduced the practice of the useful arts, "the wilderness and the solitary place are made glad, and the desert rejoices, and blossoms as the rose." Cities are founded, and gradually rise to opulence and splendor; palaces and temples are erected; the damp cavern, and the rush built hut, are exchanged for the warm and comfortable apartments of a substantial mansion; ships are built, and navigated across the ocean; an intercourse is carried on between the most distant tribes of mankind; commerce flourishes, and machinery of all kinds is erected, for facilitating human labor, and promoting the enjoyments of man. And when the principles and practice, of "pure and undefiled religion," accompany these physical and mechanical operations, love and affection diffuse their benign influence; the prospect brightens as years roll on, and man advances, with pleasure and improvement, to the scene of his high destination —*Dick*

RISE AND FALL OF FAMILIES.

Every young man should start in life determined to act upon the motto, *Nil desperandum*, or *don't give up the ship*. Let him on commencing life, look around him, and see who are the courted and respected of society, and ask from whence they sprang. In ninety-nine cases out of a hundred he will find them to be those who at his age, possessed as little of the world's gear, as little of aid extraneous as he himself possesses; men who commenced the world with nothing, and whose advancement in life solely depended upon their own husbandry, frugality, integrity and strict attention to business.

Most young men consider it a great misfortune to be born poor, or not to have capital enough to establish themselves at once in good business; this is a very mistaken notion, for, so far from poverty being a misfortune to him, if we may judge from what we every day behold, it is really a blessing; for the chance is than more ten to one in favor of the success of such a young man over one who starts with plenty of money. Look back twenty years and see who commenced business at that time with abundance of means, and trace them down to the present day. How many of them can now boast of wealth and standing? On the contrary how many have become poor, lost their standing in society, and are passed by their once boon companions, with a look which plainly says, *I know you not.*

In this country, the wheel of fortune is constantly turning, and he who is at zenith this year, may be at nadir next, and excite no surprise. It is seldom that the third or even the fourth generation enjoys property or station in society which was won by the industry of the first. This constant change is the natural result of causes in continual operation. The first generation starts in life poor, but industrious and honest; he resolves to acquire property, and at the same time sustain a character that shall command respect. By dint of long perseverance in business, and the attainment of a high character for integrity and fair dealing, he succeeds, (such a man never fails,) and becomes wealthy. His sons succeed him, perhaps maintain the character of their father, and add to the wealth he left them —they were educated to business, and know how the property they enjoy was acquired. But their sons grow up, and from infancy find themselves in the lap of luxury and rocked in the cradle of ease; their minds are never turned on business—that is beneath them—they are engrossed in important nothings; scorn labor; run the rounds of folly, marry light headed and fashionable ladies, who have as sovereign a contempt for laborers, and the useful things of this life as themselves; dash away a few years in their carriages; lose their parents; divide the property; attempt to carry on business; are incapable of managing it; fail—struggle to keep up appearances and their places in fashionable life—are obliged to retire —wretched and miserable at home—and get through the world as they can, carrying always the appearance of shabby gentlemen, and being looked at askance by their former companions. Their children are even more miserable than themselves; being brought up with the idea that labor is degrading; and that they are a superior order, while necessity compels them to resort to some means of getting a living; pride and poverty are at war with them, and they drudge out a miserable and precarious life.—*American Magazine.*

MISERIES OF INDOLENCE.

None so little enjoy life, and are such burdens to themselves, as those who have nothing to do—for

> "A want of occupation is not rest—
> A mind quite vacant is a mind distress'd."

Such a man is out of God's order; and opposing his obvious design in the faculties he has given him, and the condition in which he has placed him. Nothing, therefore, is promised in the Scriptures to the indolent. Take the indolent, with regard to exertion. What indecision! What delay! What reluctance! What apprehension! The slothful man says "there is a lion without; I shall be slain in the streets" "The way of the slothful man is as a hedge of thorns: but the way of the righteous is made plain." Take him with regard to health—What sluggishness of circulation! What depression of spirits! What dullness of appetite! What enervation of frame! Take him with regard to temper and enjoyement—Who is pettish and fretful? Who feels wanton and childish cravings? Who is too soft to bear any of the hardships of life? Who broods over every little vexation and inconvenience? Who not only increases real, but conjures up imaginary evils, and gets no sympathy from any one in either? Who feels time wearisome and irksome? Who is devoured by ennui and spleen? Who oppresses others with their company, and their questions, and censorious talk? The active only have the true relish of life. He who knows not what it is to labor, knows not what it is to enjoy. Recreation is only valuable as it unbends us; the idle know nothing of it. It is exertion that renders rest deligh ful, and sleep sweet and undisturbed. That the happiness of life depends on the regular prosecution of some laudable purpose or lawful calling, which engages, helps and enlivens all our powers, let those bear witness who, after spending years in active usefulness, retire to *enjoy themselves.* Prayer should be always offered up for their servants and wives, and for themselves too. They are a burden to themselves.—*Rev W. Jay.*

RECEIPTS, from Oct. 25 to Nov. 25, inclusive.—Nos. under 10 not noticed.

Arcole,	O. 14	Jackson,	Ark. 11	*Newark,	O. 66
*Boston,	Mass. 79	*Jeffersonton,	Va. 22	*Philadelphia,	Pa. 214
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*Baltimore,	Md. 103	*La Porte,	Ia. 65	Port Chester,	W.Ch. 11
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Clarksville,	Va. 13	Milwaukie,	W.Ter. 13	*Painsville,	O. 13
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Huntsville,	Ala. 33	*New-York city,	221		
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PRICE CURRENT.

ARTICLES.	New-York. Nov. 25.	Boston. Nov. 22.	Philadel'a. Nov. 20.	Baltimore. Nov. 18.
Beans white, bush.	2 00.. 2 25	1 37.. 1 75	1 37..1 62	1 25..1 50
Beef, best, cwt.	11 00..13 50	5 00.. 6 50	16 0..18 0	6 00..7 00
Pork, per cwt.	8 00..10 00	7 00.. 9 00	20 0..21 0	7 00..
Butter, fresh, pound,	18.. 22	20.. 25	14.. 18	20.. 25
Cheese, pound,	7.. 10	8.. 9	9.. 10	9.. 10
Flour, best, bbl.	9 50..10 00	9 50..10 25	9 75..10 0	11¼ ..12½
GRAIN—Wheat, bushel,	2 00.. 2 10	.....	2 00..2 12	2 10..2 18
Rye, do.	1 12.. 1 16	1 25.. 1 33	1 00..1 25	1 00..1 10
Oats, do.	48.. 50	55.. 58	.. 43	37.. 38
Corn, do.	1 12.. 1 13	1 06.. 1 14	1 02..1 03	1 00..1 06
SEEDS—Red Clover, lb.	13	15.. 16	9.. 11	12.. 13
Timothy, bushel,	1 82.. 2 00	2 75.. 3 00	2 00..3 25	3 50..4 00
WOOL—Saxony, fleece, lb.	75.. 80	50.. 55	65.. 73	40.. 50
Merino, lb.	50.. 63	45.. 47	45.. 50	35.. 40
1-4 and com. lb.	40.. 50	30.. 33	40.. 44	28.. 30
Sheep,	2 50.. 5 00	1 67.. 3 00		
Cows and Calves,	22 00..42 00	23 00..42 00		30 0..45 0
Cotton,	9.. 13	....	9.. 14	11.. 12

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